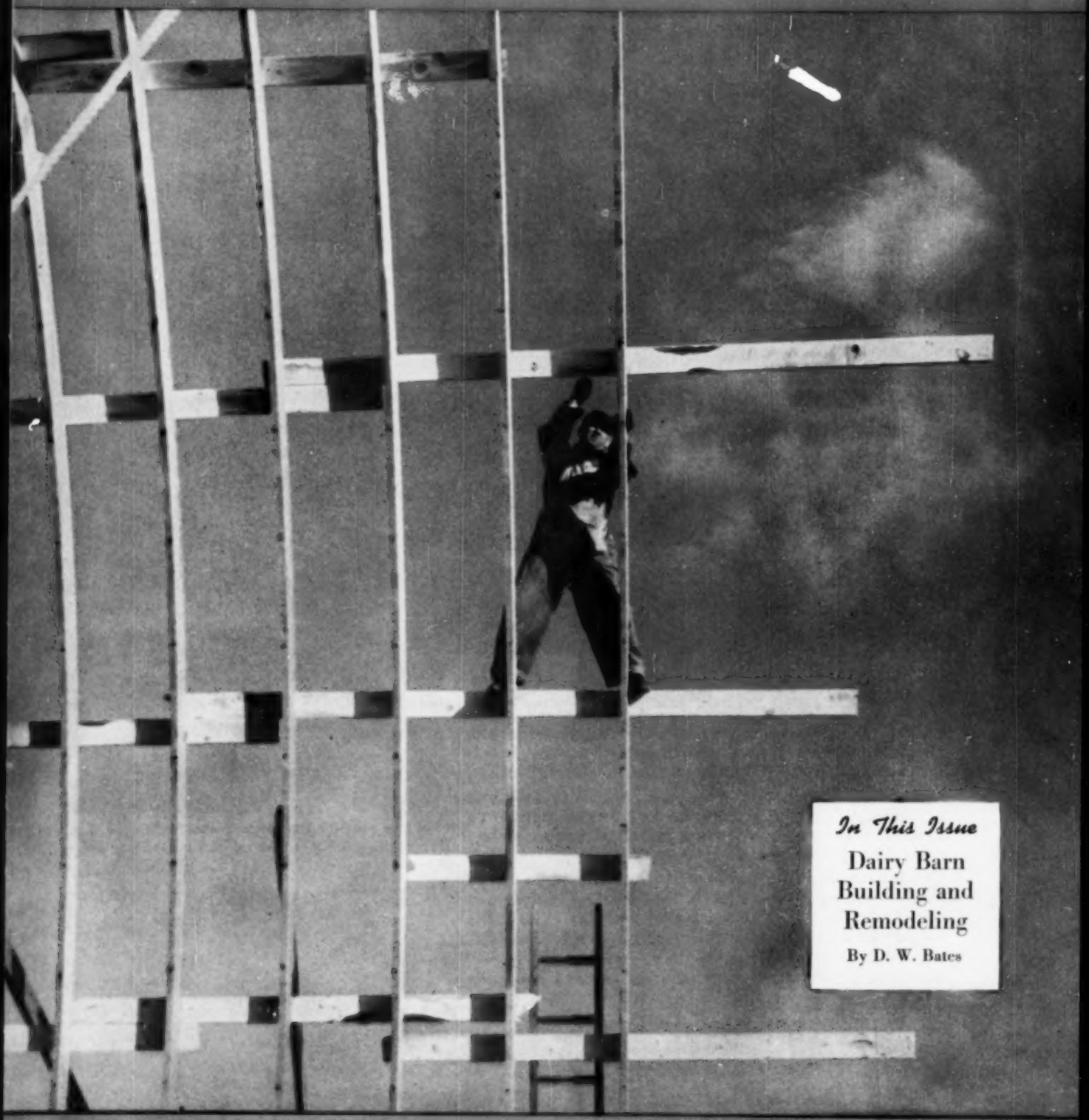
HOARD'S DAIRYMAN

THE NATIONAL DAIRY FARM MAGAZINE



In This Issue

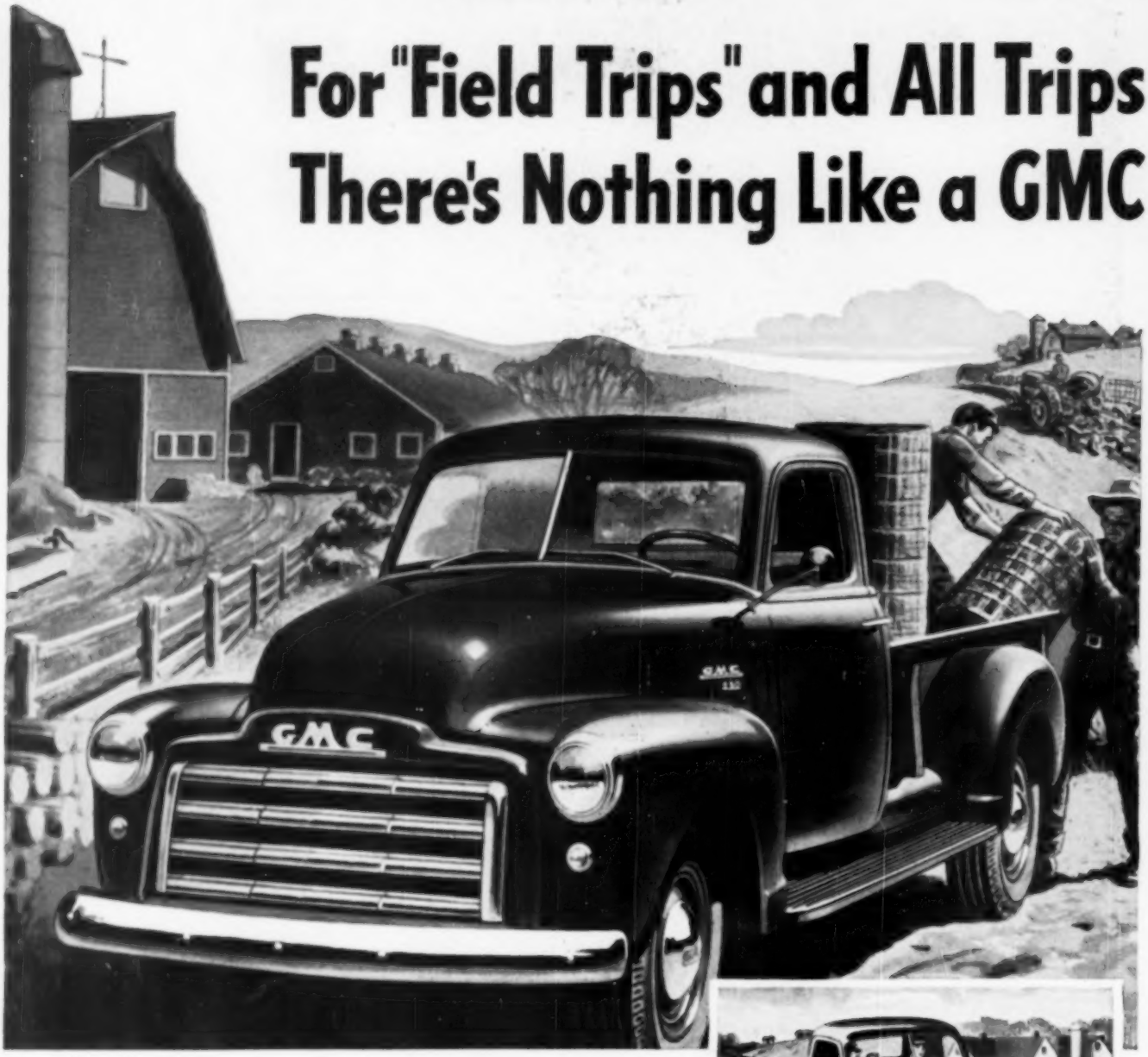
Dairy Barn Building and Remodeling

By D. W. Bates

Our 65th year of service to American agriculture

Volume 95, No. 6 Fort Atkinson, Wisconsin March 25, 1950

For "Field Trips" and All Trips There's Nothing Like a GMC



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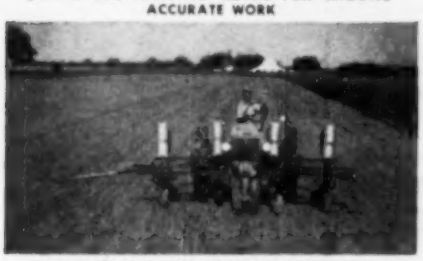
ON THE CONTOUR OR ON FLAT GROUND, MM TRACTOR PLANTERS MOUNTED ON CULTIVATOR FRAME ARE HARD TO EQUAL FOR SMOOTH, ACCURATE WORK



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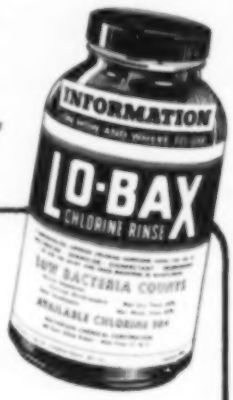

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HOARD'S DAIRYMAN

The National Dairy Farm Magazine

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COVER PICTURE

Some of our readers may recall a short item appearing in Hoard's Dairyman about a year ago in which we reported the burning of a barn just north of the Hoard's Dairyman Farm. That barn has now been replaced. The cover picture for this issue was taken during the construction of the new barn. It is a sign to our readers that Hoard's Dairyman will publish many articles on dairy farm buildings during the coming year. The first of five articles by D. W. Bates appears on page 219. The remaining four articles will appear during the spring and early summer.

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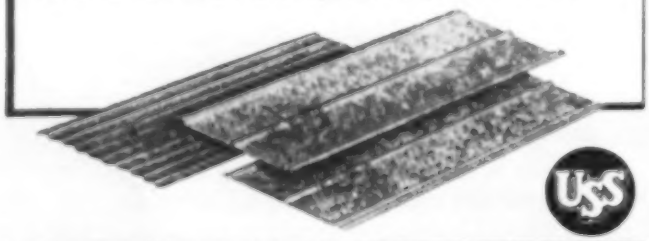


UNITED STATES STEEL

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish. It may be cows or crops, or what at the time most interests you. It may be critical or commendatory, but it should be your opinion. It is your own editorial page but your editorial must not exceed 250 words. Hoard's Dairyman assumes no responsibility for opinions expressed.

Author Errs

HOARD'S DAIRYMAN:—By a slip in my arithmetic I made an error in my article, "Parity and the Dairyman," in the February 10 issue of Hoard's Dairyman. A hundred pounds of milk will yield only about 48 14½-ounce cans of evaporated milk; not 110 cans. It takes about 2.2 pounds of milk to make one pound of evaporated milk. However, the statement that "marketing margins are sticky" still holds. Actual figures for 1948 and 1949 could have been used for the illustration.

Had actual figures been used, this section of the article would have read: Let's take an example. In 1948 the farm value of milk at the condensery was $3.84 a hundredweight, and by the time it got to the grocer's shelf, in 48 14½-ounce cans at 15.3 cents, it was worth $7.34. The marketing margin was $3.50. In 1949, however, consumers paid only 13.6 cents a can, or $6.52 for the 48 cans. The marketing margin was "sticky" and actually increased slightly to $3.75. Subtract $3.75 from $6.52 and you have $2.77 left for the farmer's hundredweight of milk. Retail prices dropped from 15.3 cents to 13.6 cents per can, or about 11 per cent. But farm prices dropped from $3.84 to $2.77 per hundredweight, or about 28 per cent. This is the picture of some dairy prices from 1948 to 1949.

The original article leaves the impression that the marketing margin is pretty wide and that the farmer gets only about 22 per cent of the consumer's evaporated milk dollar. Actually, farmers now get about 44 per cent, which compares favorably with the 38 per cent of 1935-39.

Michigan. G. G. QUACKENBUSH.

Will Use Molasses

HOARD'S DAIRYMAN:—Last spring in Hoard's Dairyman you had an article entitled "Let's Be Realistic About Grass Silage." I would like to have a copy of that article again as I have been asked to be on a panel discussion on the subject of grass silage at a soil conservation meeting.

January 1, I started a big scrapbook, putting in all such valuable articles and clippings for future reference. A copy of that article should be in every conservation and county agent's office. When I first read it, I thought it was a little ridiculous but now, after patching it together with my experiences in filling two 14-foot silos two years with alfalfa silage, I am finally seeing that Professor Bender was about 100 per cent right. I think it would be helpful to run that article over again or to run another one nearly like it.

I have tried hard *without molasses* but my experience has been varied and uncertain. The silage has been seemingly good most of the time, at least, but I must confess I haven't seen the expected results in the milk pail. In fact, last fall we experienced improved milk production when we stopped feeding grass silage and went onto straight hay feeding while refilling one silo with corn. Again this winter, when we finished the corn silage in one of our silos and went back onto grass silage, the cows went down in milk.

The way I feel right now I wouldn't think of filling a silo again with grass silage without using molasses. There is too much feed value being lost between the sickle bar and the feed manger. I have lost just as much with grass silage as with hay. Built an extra silo to save protein; instead, I have lost it. I believe there is much still to be learned to save a part of this tremendous loss from the sickle to the feed manger.

Minnesota. CLARENCE TERVEER.

"Keep Your Farms"

HOARD'S DAIRYMAN:—About 15 years ago I advised my friends and fellow farmers to keep their farms. Times have changed, but I am as sure as ever of what is in store for the future and I have no hesitation to say to you now, "keep your farms."

Here is why. First, the dollars you would receive now are worth about 40 cents of what the dollar was worth 10 or 15 years ago. Second, where could you put the dollars you would receive for your farm where they would not continue to depreciate? Government bonds are, and will continue to be, payable in dollars. Likewise, insurance is payable in dollars. Hold fast to what you have — except the dollar. If you have a home, keep it.

Wisconsin. CHRISTIE CARLIN.

Many Enjoy Hoard's Dairyman

HOARD'S DAIRYMAN:—No 4-H or Vo-Ag member should miss your dairy cow judging contest. It is educational and is a wonderful opportunity to know more about dairying. After they have entered once they won't miss it again. My club expects and can hardly wait until the January 10 issue comes out so they can get started on the 20th Annual Dairy Judging Contest. They want to be among the 4-H'ers.

I am a subscriber to Hoard's Dairyman magazine and I let all members see and use the book. They all get a lot out of it and when my subscription runs out it will be renewed.

The club will take on one of the projects on how to make a show box, as in Nov. 25, 1949, page 848. Richland County will know when they see an Ohio Farmers' 4-H member by the show box with name, club, county, and address.—JOHN HARTZ, Advisor Ohio Farmers' 4-H Club.

Treat Cows Gently

HOARD'S DAIRYMAN:—May I take this opportunity to tell you that I enjoy and benefit from reading your magazine. I like the type of articles you publish; articles on subjects like "Treat Cows Gently" which are so often forgotten and yet are so important.

New York. R. E. HOLTERBACH.

HOARD'S DAIRYMAN
Founded in 1885

Dairy Barn

Building and Remodeling

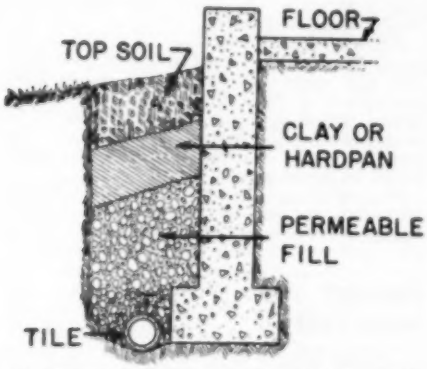
By D. W. Bates

Practical information on getting your dollar's worth rebuilding the old or building the new.

IT COSTS money to build or remodel a dairy barn. A farmer may incur a debt in so doing that will take him many years to pay. However, money wisely spent will add greatly to the value of a dairy barn from the standpoint of both the value of the farm and the increased efficiency of operation. It is hoped that this article will help farmers who are going to build or remodel avoid some of the common pitfalls in good dairy barn construction.

If a new barn is to be built, the first and one of the most important considerations is the wise choice of a building site. A relatively high spot of ground on well drained soil should be chosen when possible. The value of a well drained barnyard cannot be overemphasized. If the new barn is built on a low spot, a muddy barnyard will more than likely result. Mud holes in the barnyards make it more difficult to produce clean milk and may bring about a serious mastitis or foot rot condition in the dairy herd.

For safety the barn should be located on the same side of the road as the house. However, don't put it on the windward side of the house, as undesirable odors may carry to the house. Locate the barn so that the milk house can be attached to the stable and a drive maintained for the milk or cream truck. A barn close enough to the road to obstruct the view of a driveway will be a traffic hazard. Locate the barn if possible so as to avoid driving cows or loads of hay across a well traveled road.



A footing carried below the frost line and having proper drainage is essential to the long life of a building.

Building No Better Than Foundation

An inadequate foundation may result in cracked walls or timbers, doors and windows that will not shut, and a roof that sags. A well designed foundation will prevent heaving due to frost action, will not settle, and will protect sills and siding from rot. The footing should extend below the frost line and to firm ground. A footing 18 inches wide is adequate for most soils. However, soft clays and fine sands require a greater width and well drained gravel soils or clay hardpan require less.

Soils which are poorly drained need provision for the removal of water around the foundation. A tile drain can be set just outside the footing and even with the bottom of it, as shown in the illustration. The tile should extend completely around the foundation and be connected to a tile line which leads to a suitable outlet. The drain ought to have a fall of at least one inch for every 10 feet of run. A gravel or coarse cinder fill placed over the drain will permit water to drain rapidly into the tile. Surface water can be excluded with a clay fill near the surface. The ground next to the top of the foundation should be graded so that water will drain away from the building. Eave troughs should be maintained to carry roof water away from the foundation and not into the barnyard.

The use of quality concrete in all farm buildings is of paramount importance. It is frequently thought that the ratio of cement to sand and gravel is what determines the strength of concrete. Actually it is the amount of water used in mixing that largely determines its strength and durability. A specific amount of water per sack of cement should be used and enough clean sand and gravel added to give a workable mix. For most farm jobs five to six gallons of water per sack of cement is recommended. If the sand used is very wet or very dry, the amount of water should be varied slightly. Only water which is fit to drink should be used for concrete.

Gravel For Concrete

Bank run gravel usually runs high to sand and requires more cement to make a good quality concrete. For the most economical concrete making, the fine material should be separated from the coarse and then recombined in the correct proportion. To determine their desirability for concrete, bank sand and gravel should be tested for organic matter.

Posts of adequate size are generally found in dairy stables. However, all too often they are set on footings entirely too small. A footing 3 feet square will support posts for dairy barns without settling under average conditions. On hardpan, well drained gravel, and dry clay soils the size of the footing can safely be reduced in two feet square.

The practice of storing baled or chopped hay for dairy cattle is increasing rapidly. As a result, the mow floor in the dairy barn must often support a much heavier load than when loose hay was stored. Because baled hay is likely to be stored in most new barns, floors should be built strong enough to support the load. Loose hay weighs about 4 pounds per cubic foot; field-baled hay, 6 to 8 pounds per cubic foot; hay wire-baled in a stationary press, about 12 pounds per cubic foot; and chopped hay, about 8 pounds per cubic foot.

Woods For Joists and Girders

Select strong woods for joists and girders. Of the trees found in the farm woodlot red and white oak, rock elm, black and yellow birch, hard maple, beech, and white ash are most suitable. A knot in the lower half of a floor joist will weaken it materially, although one in the upper half will weaken it but little and in many cases not at all. The weaker woods such as eastern hemlock, northern white pine, redwood, and yellow poplar can be used to best advantage for siding and roof sheathing where they will not be subjected to heavy loads. If they are used for beams, correspondingly larger sizes are needed.

Beams built of planks *(Turn to page 834)*

Mud-caked cows should be a part of the past on this Illinois farm after the paved barnyard is completed.

FARM FLASHES

SOD WATERWAYS

Spring plowing has already begun in many sections of the country, and in a few weeks will be in full swing over most of the nation.

Conservationists recommend that if land has more than a three per cent slope, it should be plowed on the contour and in contour strips. An-

other conservation practice that should be borne in mind when plowing is to establish sod waterways. By sod waterways we mean leaving sod in all natural draws or waterways. The water which will run down these natural depressions after each rain, if a good sod is left, will be spread and slowed down so as not to cut out gullies. If these sod waterways are properly taken care of, they need not become forgotten acres on any farm. They can produce a crop just the same as the remainder of the field.

Some of the ways in which such areas can be used, in addition to slowing up run-off water, are:

1. They make excellent outlets for diversion ditches.
2. They afford means of getting from one strip to another.
3. They can be harvested and should furnish enough hay to more than pay for the lime and fertilizer used to maintain them.
4. They afford a runway or lane for wildlife to move from one type of habitat to another.

RAISING REPLACEMENTS

Some of the best advice that can be given to any dairy farmer is that in practically all cases it is more profitable to raise your own replacements than buying adult cows.

Every time you buy an animal and put it in your herd, you run some risk of bringing diseases and parasites to your farm. This is true even though you use every possible precaution and isolate the animals for a certain period of time. There are some diseases and parasites for which there are no reliable tests.

The following questions suggested by West Virginia extension dairyman, G. Heebink, should be asked by every dairyman before buying another cow:

1. Why is the cow for sale?
2. Might she carry some infection that could ruin my herd?
3. Could she bring disease germs to my farm in the mud on her hair or the dirt on her feet that she picked up in a truck or cattle car or public stockyard?
4. Might she be a shy breeder, a cull, a kicker, or a hard milker?
5. How do I know that she is a better milk cow than I can get by raising my own heifers?
6. If I buy this cow I can sell her at a higher figure but will the profit I make cover the risks I have to take in putting her in my herd until I sell her?

If we could take a poll of all of the dairy farmers of the nation, it is very possible many of them are sorry they failed to consider these questions when they bought cows a few years ago.

TREATED SEED POISONOUS

Practically every spring there are reports of losses of hogs which have been fed treated seed grains.

The University of Minnesota has conducted experiments testing the possible poisonous nature of treated seed oats.

Growing pigs were fed treated oats for certain periods of time, and as a control some pigs were fed untreated oats. These remained healthy and made an average rate of gain for pigs fed only oats and water.

Part of the group was fed oats that had been treated with Ceresan M at the rate of ½ ounce per bushel. Two pigs eating this oats for 20 days survived that period, but died five and nine days, respectively, after the experimental period was over.

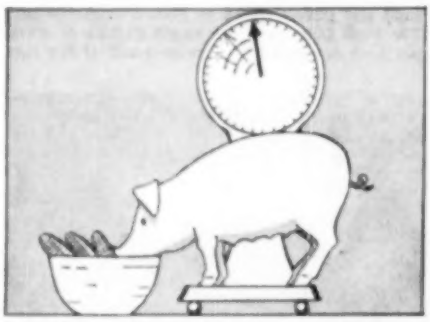
The first symptom of sickness shown by the pigs eating treated oats was a weak and unsteady gait. It was hard for them to get to their feet and they could walk only a few steps. Scouring soon developed, and the pigs often vomited after eating the treated oats. Some of them seemed to get dizzy, turning around in circles. A day or two later they became paralyzed and died.

In view of the results obtained, it is recommended that any surplus seed grain not be used for feed.

FATTENING SOWS

Animal husbandmen at the University of Wisconsin report that when fed a good ration, thin sows put on weight about as fast and cheap as do pigs.

As a result of feeding trials, they conclude that up-grading on the market for the better fin-



ish on fattened sows may actually make the operation more profitable than feeding shoats.

A group of sows on a ration of 11% protein gained two pounds a day at a cost of $14.44 per hundred. The other lot, which received a 14 per cent protein ration, gained 2½ lbs. a day at a cost of $12.76 per hundred. Growing sows gained about 1 1/3 lbs. a day at a cost of $12.65 a hundred.

In other words, sows being fattened have about the same feed needs as growing pigs, including protein.

POISONING SPARROWS

This is the season of year when English sparrows become a nuisance on many farms, and they can be poisoned with strychnine during late winter and early spring when food supply is short.

An Iowa wild life specialist, Robert Moorman, recommends the following method of preparing

bait: Dissolve one-eighth ounce of sulfate of strychnine in a cup of boiling water. Then pour the strychnine over 1 quart of thoroughly dried oats or wheat in a half-gallon fruit jar. Cap the jar and shake at intervals until all the liquid has been absorbed by the grain. The grain should then be dried before using.

Before placing the bait itself, it is wise to prebait with grain for a period of four to seven days. Moorman warns that strychnine is extremely poisonous to all birds and animals, so every precaution should be taken to keep it away from farm poultry, pet pigeons, and song birds. Excess bait as well as sparrows killed by the poison should be picked up and buried.

Ideal sites for the prebaiting and poisoning operations are unused poultry runs, enclosed barnyards, or flat roofs of chicken houses, or any place not used by birds other than sparrows.

PROTECT THE HONEYBEE

To get the maximum production of legume seed, a large increase in the number of honeybees must be stimulated, says Bee Specialist F. E. Moeller of Wisconsin.

Putting on insecticides by the dusting method kills many pollinating insects because the dust drifts so badly. However, proper treating of crops, such as alfalfa, for harmful insects does more good than it does damage. Arsenic sprays are most harmful to bees. In addition to killing the adult bees, the poison carried in the pollen may kill the brood. Arsenic poisoning in the pollen stored in the hive may last for a long time.

Benzene hexachloride, another bee enemy, is 200 times as poisonous as is DDT. Two other insecticides highly poisonous to bees are hexaethyl tetraphosphate, commonly called HET, and Parathion.

DDT, fluorine compounds, chlordane, and toxaphene are all quite poisonous and rank in that order. However, if used with care, they do little damage. While 2,4-D is not harmful to bees, it may destroy breeding places for wild bees.

In order to keep the losses of bees by poisoning to a minimum, do not spray close to crops that are in bloom. Use the weakest poison that will do the job and treat crops early for better control of pest insects. When possible, use sprays instead of dusts.

Grass Seeding Made Easy

By Dale Hull

Grass seeding techniques are becoming more important to the dairy farmer. The author discusses various seeders and their operation.

WHETHER his grass seedings catch or not means a lot to the dairy farmer. If he doesn't have a good reliable supply of home grown roughages, he either has to compete in a local market or have them shipped in. Pasture improvement is also an important farming operation with the dairyman. He wants pastures that get an early start in the spring, that can stand the dry summer months and still provide substantial roughage in the fall. Providing rainfall is sufficient, he can now get these good uniform stands of grasses and legumes for hay and pasture by use of improved seeding technique pioneered by midwestern agricultural experiment stations.

What Is Good Depth?

During the past few years, several of the state agricultural experiment stations have made studies to find the best depth of seed placement for grasses and legumes. All studies point to the proper depth of seeding as ranging from just under the soil surface to one-half inch deep, depending on the grass or legume to be seeded. Practical depths with machine seeding are from one-sixteenth inch to one-half inch because of mechanical limitations. It has been found that grass seedings deeper than one-half inch do not seem to fare well under average field conditions.

Mechanical seeding of grass and legume seeds as mixtures is complicated because of the shape and size of the seeds. Grass seeds, such as brome, bluegrass, and orchard grass are light and chaffy and many tend to bridge over the seeder feed mechanism. Alfalfa and clover seeds are smooth, heavier, and more uniform in size. This makes legumes relatively easier to seed with grass seeding attachments for grain drills. In combined seeding operations, the seeding machine must also handle small grain kernels which vary widely in their weight, shape, and size. Development of satisfactory multi-purpose seeding machines has been a real challenge to the agricultural engineer.

Despite several advantages, end-gate seeders are rapidly falling into disfavor among dairy farmers who demand and need good stands of seedings every year.

While the standard type of wheel mounted sower type seeder is used to some extent, the more familiar broadcast type end-gate seeder has been more commonly used by dairymen. There are several real reasons for the widespread use of the end-gate seeder. Savings in operations have resulted by seeding oats on stalk ground and disking to secure a seed bed. End-gate seeders mount on the wagon box so that the grain hopper can be filled without stopping. This is a real advantage over the grain drill and the newer straddle mounted or combination machine. Wide seeding swaths, up to 50 feet, make the seeding rate very rapid. The first cost of the end-gate seeder is low and its service life relatively long compared with other farm machines.

Multi-Purpose Packer Seeders

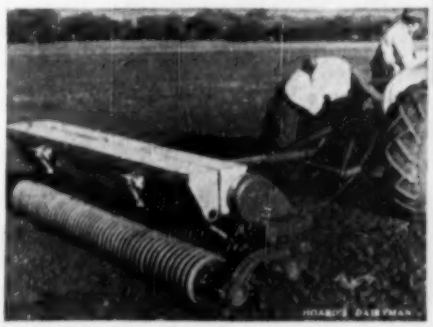
Difficulties encountered securing good uniform stands of brome-alfalfa and other legume-grass combinations have been largely eliminated by the development of the multi-purpose packer seeder. These new machines were pioneered by the Wisconsin and Iowa agricultural experiment stations. As early as 1938, Professor F. W. Duffee at the University of Wisconsin reported studies made seeding alfalfa and timothy with an experimental packer seeder as compared with a grain drill. This first experimental machine was built up using a double gang corrugated type soil pulverizer upon which was mounted a grain drill grass seeding attachment. The seeding attachment was driven by a trailing wheel which was raised off the ground to throw the seeder mechanism out of gear.

About 1944, E. V. Collins at Iowa State College built a similar machine using a double gang rotary hoe. This machine did not produce the desired seed coverage. In 1945, Collins and E. L. Barger at the Iowa Station, at the suggestion of M. E. Heath then located at the Soil Conservation Service Grass Nursery at Ames, assembled the first multi-purpose grass seeding attachment for soil pulverizers. It incorporated the double gang corrugated soil pulverizer, the grass seeding attachment from a grain drill, and a fertilizer spreader box using a rotary reel feed mechanism designed by a former Minnesota county agent, E. S. Gandrud. This combination produced good stands of grasses and legumes.

The main advantage of the packer seeder is its ability to place the tiny grass and legume seeds less than one-half inch in the soil. This is accomplished by feeding all seeds down between the front and rear roller gangs by seed tubes and metal shields. The front gang prepares the seed bed, making shallow furrows into which the seed falls. The rear gang splits the ridges, covers the seed, and compacts the soil. This tends to conserve moisture and produces conditions which are right for rapid germination of the seed. When seedings made with this machine germinate and break through the soil, the seedlings growing in the roller marks produce a uniform, rowed effect that will be appreciated by the farmer. Observations indicate that seedings of grasses and legumes *(Turn to page 224)*

Double box multipurpose packer seeder planting brome-alfalfa mixture. Seeding attachment straddles double gang roller.

Straddle mounted seeding attachment used with double disk. Fertilizer is placed in one box, small grain in other.



Double box packer seeder planting brome-alfalfa mixture. Has quick throw-out to stop seeder mechanism when turning.

This is another type of fertilizer grain drill with a grass seeding attachment.

A 12-foot drill with fertilizer attachment. Rear wheels are press wheels, which press soil down over seed, increasing capillary action.

This machine combines what once took four operations: seeds small grain, legumes, grasses, and applies fertilizer.

Daughters

Windy Shade Wayne Consul, second daughter that died young. Two DHIA records averaging 9,620 M, 352 Fat.

Windy Shade Canary Posch, Excellent, fourth daughter, 3 AR records, 2 on 2x, all 365 days, that averaged 15,138 lbs. milk, 537 lbs. butterfat.

Windy Shade Wayne Canary Posch, fifth daughter of "Old Canary," Good Plus, State leader in 10 mos. div., Jr. 2, 2x, 15,667 M, and 533.8 F.

Windy Shade Duntoch Wayne Canary, sixth daughter, holder of State Record as a Junior two-year-old, 2x, 365 days, 16,805 M, 612.1 F.

Windy Shade Wayne Canary Pietertje, third daughter. Very Good. Six AR records, all 2x, averaging 17,669 M, 627.8 F, including a State Record.

Pietertje Garbon Canary, 1st dau., dam of Windy Shade Queen Rita, right. Two DHIA records averaging 10,541 M, 358 F, both immature.

Right: Wayne Canary Pietertje at 10 years of age.

Her records are:	Lbs. Fat	Lbs. Milk
DHIA 2x 335 days, 5 yrs.	519	12,975
DHIA 2x 305 days, 5-10	481	12,025
DHIA 2x 343 days, 6-10	564	14,842
AR 2x 343 days, 8-8	588	15,801

Gems In The Rough

By George Nichols

LOCATED in Southwestern Ohio, not far from where the Miami River meanders southward around rolling hillsides and through grassy meadows, is Windy Shade Farm, owned by Sam J. Johnson.

On this sprawling 350-acre farm, most of which is tillable, Johnson has developed one of Ohio's top-notch Holstein herds during the past decade. During that time he has also reaped many honors which rarely befell a beginner breeder of dairy cattle in such a short span of years. These laurels include the development of a Gold Medal sire, a national champion milk producer on 2X, and seven Ohio leaders in butterfat production on 2X. Six of the seven state leaders were bred at Windy Shade, five of the records stand at the present time, and four of the records were made by daughters of one cow.

Johnson always had a lust for good livestock and in the summer of 1936 decided to stock his farm with registered Holsteins. He procured a small herd from the G. M. Gaines Estate of Kentucky which included several heifers and a few young cows. In this group, but unknown at the time, were two "gems in the rough". One was a young cow with a calf by her side; the other was a yearling heifer. The cow was Wayne Canary Pietertje; the yearling was Echo Aaggie Florence. Both were by the same sire.

Wayne Canary Pietertje, referred to by Johnson as Old Canary, was the dam of eight heifers by five different sires. Seven were born at Windy Shade. Unfortunately her last heifer died when only a few days old, due to an injury sustained shortly after birth. Her first two daughters died rather young in life before much in the way of production records could be obtained. However, her other daughters have left no doubt as to the outstanding ability of this old bossy to transmit highly desirable characteristics to her offspring.

Five daughters have made official production records in excess of 600 lbs. fat. Four of them are state leaders in Ohio in butterfat production on two time milking. Five were classified for type with one Excellent, one Very Good, one Good Plus, and two Good. Two granddaughters are classified Excellent; one with over 600 lbs. fat and the other with over 700 lbs.

After two quarters went bad, Old Canary was used as a nurse cow and was later sent to the block at around 14 years of age. For his junior herd sire, Johnson is using a grandson of Old Canary, sired by his Gold Medal sire, and out of Windy Shade Wayne Canary Pietertje with 791 lbs. fat on twice a day milking.

Although the results of Echo Aaggie Florence as a brood cow have not been as spectacular thus far as those demonstrated by their half sister, she has one distinct advantage. At 14 years of age she is still alive and having calves. As a producer her records have surpassed those made by Old Canary. She has had seven daughters, five of which are in production at Windy Shade. Three have been classified for type with two scoring Very Good and one Good Plus. Johnson feels that she has been perhaps a little more prepotent as a transmitter of type than was her counterpart Wayne Canary Pietertje.

As for herself, Echo Aaggie Florence is classified Very Good and has a string of records on 2X that would make any cow man take note. She has stood the test of time remarkably well, and has, as Johnson so aptly put it: "An udder that would make a four-year-old blush". The progeny of Echo Aaggie Florence and Wayne Canary Pietertje, now in the fourth and fifth generations, account for around 25 head of animals at Windy Shade.

The Gold Medal sire which Johnson has developed is Winterthur Posch Ormsby Fobes, classified Very Good, and son of an Excellent Gold Medal sire—Posch Ormsby Fobes 14th. His 19 daughters at Windy Shade have an average classification score of 85 per cent. At maturity several of his daughters are hitting around 700 lbs. fat on 2X, and tape from 1,550 to 1,800 pounds. They have exceptionally good udders and stand on remarkable feet and legs.

The cows at Windy Shade are milked twice daily. They run together in pasture in summer and stand in stanchions during the winter. For a dozen years Johnson has been a champion of grass silage, filling his silos to the brim each spring. His mows are also stacked full of good hay.

Herdsman Art Caster, who has been in charge of the farm and herd for a number of years, is about the biggest "crank" in Southwestern Ohio when it comes to putting up alfalfa hay. With one eye on the weather and the other on the stage of maturity, Caster knocks down just enough at one time to take care of handily. If the weather outwits him he hasn't ruined the whole field. The result—he generally has a mow full of choice green leafy alfalfa during those long winter months when the cows need it.

Granddaughters

Windy Shade Bessie Inka Canary, Excellent, dau. of W. S. Wayne Canary Pietertje, left, 2 AR records, 2x, averaging 18,213 lbs. M, 659 lbs. F.

Windy Shade Queen Rita, Excellent, AR record on 3x at 5 years, 8 months, 365 days, 18,024 M, 601.9 F.

Great-Granddaughter

Windy Shade Posch Inka Canary, V. G. Gr. granddau. of "Old Canary," dau. of Windy Shade Queen Rita, 2-yr. record, AR, 2x, 305 days, 11,545 M, 381 F.

When and How to Tile

By Keith H. Beauchamp

Much of our land could be made more productive if a properly designed drainage system were installed. Here is an outline of some important considerations:

A poorly drained field of corn in Illinois. A random tile system laid in the wet areas would make the entire field productive.

DO YOU have land that is slow getting in condition to be worked in the spring? Does it stay wet longer than other areas? Does this same thing happen after a rainy spell at any time during the crop season?

Do you have a field that is always too wet to crop or a pasture that produces only water-loving weeds and sedges? If so, your land needs drainage. Where the wetness is not caused by continual overflow or ponding of water on the surface of the land, tile drainage probably is the best solution to your drainage problems.

You may have a field with seep spots or springy areas on a hillside. Possibly some waterways are too wet to maintain in sod or to cross with farm implements. Tile drainage will solve these problems, allowing you to cultivate the entire field and develop good grass waterways.

Will Tiling Pay?

Before making an investment in tile drainage, be sure you have a soil that will be highly productive after drainage. The soil must be the kind that can be helped with tile drainage. Some soils are so tight that they cannot be drained successfully. Others are naturally so well drained that tile drainage will not increase production or reduce costs enough to justify the investment. Some soils have caused tile joints to seal so that no water can enter the tile, and others necessitate special precaution in laying to insure success.

Generally, loam and clay loam soils are suitable for tiling. A subsoil that cracks and separates down under the surface to let water through, can usually be drained. This can be determined by allowing an undisturbed sample to dry. If it breaks apart easily after drying, it usually can be drained satisfactorily.

Peat and muck soils will respond to tile drainage. However, when raw peat or muck is drained, the entire field will probably settle as much as 25 per cent of the tile depth. For this reason, deep peat or muck that has never been drained should first be drained by open ditches to permit initial settlement. After four or five years, tile can be installed.

Tile drainage has proved profitable even on some of the sandy loam soils, sometimes considered reasonably well drained. As a general rule, soils which have a subsoil composed largely of sand should not be tiled as the sand will fill the tile, making it useless.

A thorough knowledge of the reaction of soils and crops to tile drains is essential, especially where tile drainage is not a common practice. If you are not sure of your soil, consult a soil scientist or a reliable drainage engineer. If you have a soil that will respond to tile drainage and will be highly productive after being drained, tile drainage will pay you big dividends.

Must Have An Outlet for System

The next important consideration in determining the feasibility of tiling is the question of an adequate outlet for the tile system. The outlet is not only the beginning but also the foundation of any drainage system. How well the system works and how long it will last depends on the quality and durability of the outlet.

Be sure you have an outlet that will take away all the water the tile will bring and take it away as rapidly as it is brought. The outlet should be so located that the tile water can be discharged freely. An outlet that is submerged or partially submerged in mud and water, or even submerged for extended periods during rainy spells, is not an adequate outlet. The outlet must be free from obstructions so that it will dispose of the water as fast as the tile collects it and carry off any silt that enters the tile.

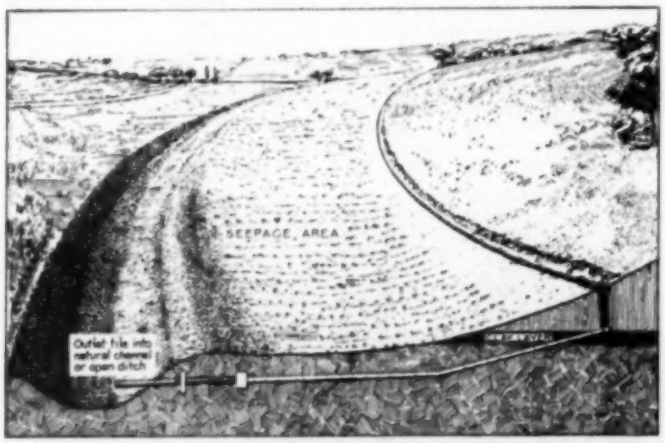
If the outlet is submerged or blocked, drainage of your land will be slowed. Silt will fill and block the tile main, making it useless in time. Blowouts will probably occur along the main and more soil will be carried into the tile from these blowouts. This damage will speed up the process of ruin and your investment in the tile system will be lost.

Provisions should always be made to protect the outlet of your tile system against being washed out, dammed up, or broken down and plugged up. Ordinary drain tile should not empty directly into a ditch. They should empty through a metal pipe or a structure. If surface water enters the outlet ditch at the same location as tile outlet, a concrete or masonry headwall should be used. The headwall should be provided with a notch of sufficient size to carry the surface water and an apron for the water to spill upon. The tile should be carried through the headwall at least one foot above the apron. If surface water is not a problem, a 16 to 20 foot section of metal pipe on the end of the tile with at least two-thirds of the pipe embedded in the ground will provide a very satisfactory outlet.

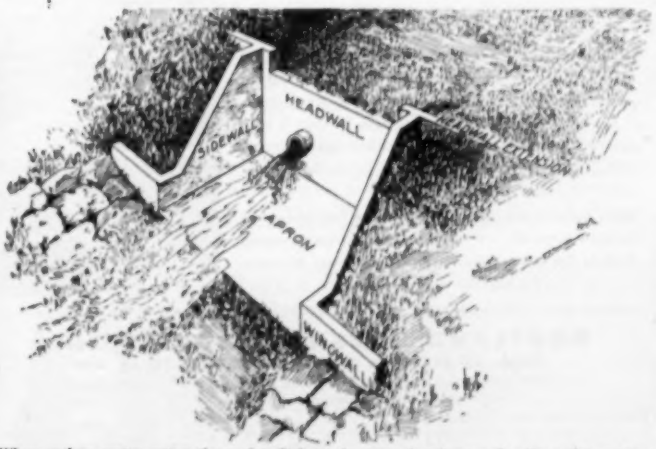
Which System Most Efficient

Tile drainage is costly. Proper planning is necessary to secure the most economical and efficient system. Various field conditions determine the right location of tile. A poorly drained soil having little slope and uniform texture will probably need a tile system with parallel lines of tile emptying into a main *(Turn to page 241)*

The author is Regional Drainage Engineer for the Soil Conservation Service.



A tile line is located across the slope and far enough above the wet area so that the tile rests on the impervious clay layer and has at least two feet of cover over the tile. An outlet line carries this tile water to the ditch.



When surface water enters the outlet ditch at the same location as the tile outlet, a concrete or masonry headwall should be used. The notch in headwall must be large enough to carry all the surface water without overtopping or the structure will be washed out.

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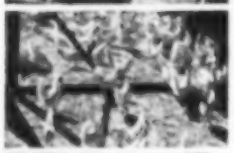

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Grass Seeding Made Easy

(Continued from page 221)

made with the multi-purpose packer seeder germinate better and produce more uniform and thicker stands as compared with broadcasting and harrowing, broadcasting and disking lightly, or using the grain drill with the grass seed tubes placed to prevent covering the seeds too deeply. Not to be overlooked is a 25 per cent saving in high priced seed. Seed may be higher priced and harder to get when corn belt farmers begin to seed a greater acreage to meadow and rotation pasture to comply with 1950 production and marketing administration acreage allotments.

Using the Packer Seeder

Two good commercial models of the packer seeder are now available. One make is an integral unit for seeding only. The second manufacturer has a seeding attachment straddle mounted over the roller. The straddle mounted seeding attachment can be removed and the roller used alone. Besides seeding legumes and grasses, the hopper on this latter machine will serve as a double box fertilizer spreader. It can also be used as a small grain seeder—fertilizer combination. The very latest in new seeding machines is the fertilizer grass seeder—grain drill.

When using the packer seeder it is important that a good seed bed be prepared. The seed bed must be dragged down level as any ridging will not let the rollers penetrate the soil uniformly. Dragging retains the moisture near the surface of the soil, yet lets the surface dry slightly. It is usually best to let the seed bed dry three to five hours before using the seeder. On wet surfaces, corrugated rollers tend to fill with soil and the seed will not be covered adequately.

During the past five years at Iowa State College we have used machines having rollers with three different widths of corrugation. The manufacturer of the machine with a 2-inch corrugation contends that using a wider corrugation places the seed too deep. He depends on a floating and shifting action in the roller ring sections to keep the corrugations clean. Our laboratory-built machines have all used standard soil pulverizing roller gangs with 4-inch corrugation. The other manufacturer uses a 3-inch corrugation with a special sharp edge to secure penetration into the soil. The machine using the 3-inch corrugation is also self-cleaning. Regardless of the width of corrugation, our experience indicates they will all fill with mud if you try to seed when the soil is too wet.

Our experiences with these improved types of grass and legume seeding machines have been consistently good at Iowa State College. Meadows are smooth and it's easy to operate hay tools. Stands have been satisfactory and a disagreeable job has been made easy. Any dairyman would find a multi-purpose packer seeder a valuable addition to his production equipment.

Grain Drills Do a Good Job

Grain drills have a big advantage in being able to combine three operations — seeding of small grain, seeding of grasses or legumes, and applying fertilizer in one trip over the field. Wide increases in the use of commercial fertilizers to improve grass and legume seedings and step-up small grain yield makes purchase of the fertilizer-grain drill with seeding attachment advisable.

Dairymen considering purchase of a grain drill will want to purchase a machine which will best suit his individual needs. It is our belief that most dairymen will find it desirable to purchase the fertilizer-grain drill with grass seeding attachments. The 10-foot width is a practical size because it will cover three corn rows planted with 3'-4" (40-inch) row spacings. This size drill can be pulled with any tractor which will handle a two-bottom plow. (Don't get the idea a drill pulls easy on soft seed bed.) The single disk furrow opener with 7-inch disk spacing is considered the most economical to purchase and maintain. Three-drill row spacings are generally available, the 6, 7, and 8-inch sizes. At least a 7-inch spacing is needed to permit passage of corn stubbles and other surface crop debris. The single disk furrow opener will penetrate the soil well and cut through the trash better than the double disk. If rainfall is short or if you live in a dry farming or sub-humid area, you may want to purchase pack wheels. Power controls are highly desirable.

In the matter of drill row spacing, some interesting studies are being carried on at the Iowa Station. The problem involves the tendency for heavy strawed oats, such as Clinton, Benton, Mohawk, and others to smother out seedings. Many dairy farmers have already encountered this problem. Studies of yields, legume and grass stands, and weed problems have been made using 7, 14, and 21-inch drill row spacings. These preliminary results indicate no reduction in yield using the 14-inch rows, and only a moderate reduction in the 21-inch row spacing. Legume and grass stands do better, but weeds become a definite problem with the wider spacings. Spraying will take care of most of the weeds but may also reduce stand of legume seedlings. Because of this late information, it might be advisable to purchase drills with the 8-inch row spacing to reduce competition between the grain and grass seeding. It would certainly be to an advantage where clogging from sur-

This farmer is combining operations to increase efficiency. He is plowing and seeding small grain in one operation.

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face trash and cornstalks and stubs has been troublesome.

Drills Need to Be Adjusted

To get the best stands of grasses or legumes with the drill, direct the seed tubes to let the seed fall behind the disks. The drag chains will cover the seed lightly, but for best results harrow lightly or pack with a corrugated roller. Resulting stands are about as good as with the packer seeder. You've done three jobs in one trip over the field.

Don't ever let grass and legume seeds fall ahead of the furrow openers or be directed down the grain tubes. This will place the seeds too deep and stands may be reduced as much as 25 per cent.

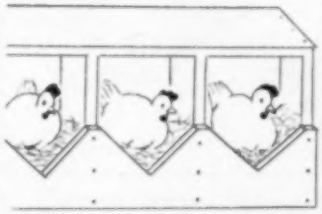
Various Combinations Possible

Use of the multi-purpose packer seeder is not confined to grasses and legumes alone. When using the straddle mounted type of machine it is possible to use the seeding attachment with a double disk for seeding oats and other small grains. Fertilizer is placed in one box and the small grain seed in the other. Using this combination, the front disk gang prepares a seed bed while the rear gang covers the seed and fertilizer. When the small grain seeding is complete, the grass and the legume seeding may be made using the multi-purpose packer seeder using the roller. If the cornstalks have been well cut by the disk, no particular difficulty should be experienced getting coverage with the double gang corrugated roller. The straddle mount can also be used alone as a fertilizing machine. Two kinds of high analysis fertilizer can be prescription spread by placing one kind in the front box and the other kind in the rear box. By this means it is possible for a farmer to spread almost any combination of high analysis fertilizers on his land in a once-over operation. Both of the commercially built packer seeders are equipped with a type of seed mechanism making application of fertilizer possible.

Some farmers may find that they prefer to have a plowed field for oats and small grain seeding. This means either fall plowing or an early job of spring plowing. For these farmers one of the four or five foot grain drills would be just right for pulling behind a three or four bottom plow. By use of this machine the field is plowed and planted in one operation. An outfit of this type would require a large tractor. However, it is important to buy a drill which will fit with your plow to prevent gapping or overlapping in the small grain seeding. If desired, a pulverizer-packer is available to use with these narrow drills.

. . HANDY HINTS . .

KEEPING HENS OFF EDGE OF NESTS

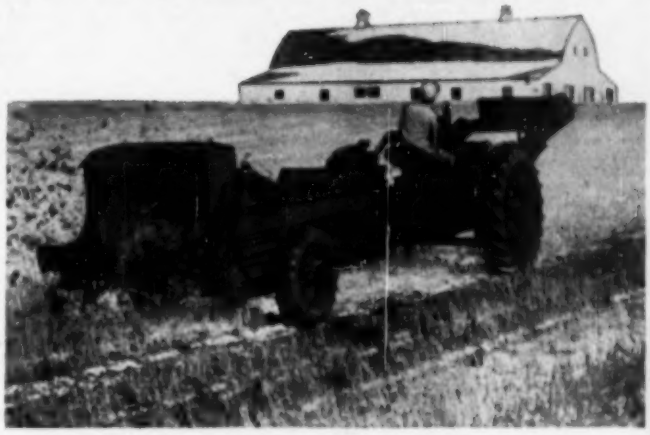


If your chickens have a habit of roosting on the edges of the nests, you can prevent it by following this suggestion. Notch the edge of the front retaining board, thus making it difficult for the hens to perch on it and they will soon give it up.

Minnesota. MISS ALVINA LAHR.

NEW 90-BUSHEL MANURE SPREADER

Saves You Trips From Barn to Field



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✓ **SELF-RAISING HITCH** *for Easy Hitching*

✓ **CENTER AXLE BEARING** *for Heavy Loads*

✓ **STEADY APRON TRAVEL** *for Even Spreading*

EXTRA CAPACITY *plus* all the other features you want most in a spreader — easy loading, easy hitching, even spreading and long, dependable service — are combined in this new Case "T8" spreader. The box lets down to take some of the lift out of loading; the self-raising hitch takes *all* the lift out of hitching and allows tractor to move forward for better traction before starting the load. Apron travel is almost continuous, gives more even spread. Rugged beaters and wide-spread give effective shredding. Center bearing on axle gives extra strength and rigidity for heavy loads. Steel box with treated wood bottom resists action of acids. Let your Case dealer show you the "T8" — also the "T6," the 70-bushel size proved for endurance and performance with light tractors.

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Mark items that interest you; write in margin other machines you need; mail to J. I. Case Co., Dept. C 59, Racine, Wis.

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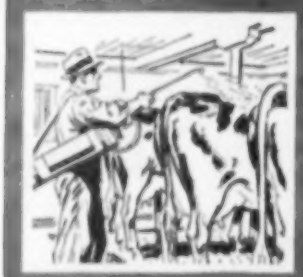

on the cows

and in barns

SAFE ANYWHERE because it contains METHOXYCHLOR Approved by the U.S. Dept. of Agriculture

SAFE—On milk cows *and* in dairy barns, milk rooms, and premises. Also safe to use on young stock and stock to be slaughtered. Safest long-lasting insect killer yet discovered.

EFFECTIVE—Kills hornflies, stable flies, houseflies, mosquitoes, fleas, and lice.

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ECONOMICAL—One pound is enough to spray about 25 head thoroughly, or to cover 1,500 square feet of wall surface.

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Get it at your local dealers in ¼-lb., 1-lb. and 2-lb. packages. Or if he doesn't have it, write to Du Pont, Animal Industry Div., Wilmington 98, Delaware.

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BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

Tune in Du Pont "CAVALCADE OF AMERICA" —Tuesday nights, NBC, Coast to Coast

Dairy Digest

FEBRUARY NEW YORK MILK

Dairy farmers will be paid a uniform price of $3.84 per hundredweight for their February deliveries to pool-approved plants in the six-state New York milkshed, according to a forecast released by Dr. A. J. Pollard, acting marketing administrator of the New York metropolitan milk marketing area.

He estimated at the same time that the producer butterfat differential for February would be 5.6 cents for each tenth of a pound of fat above or below the 3.5 per cent standard.

1950 IBCA CONVENTION

The International Baby Chick Association will hold its 1950 convention in Minneapolis, Minnesota, July 18-21, at the municipal auditorium.

MOORE HEADS DIVISION BDI

The U. S. Department of Agriculture has announced that Dr. Lane Moore, assistant head of the Division of Nutrition and Physiology in the Bureau of Dairy Industry, has been appointed head of the Division to succeed Charles A. Cary who retired January 31.

Dr. Moore will direct certain phases of the Bureau's research relating to physiology of reproduction and lactation of dairy cows, the nutritive requirements for growth and reproduction, the value of forage crops in the ration, and methods of conserving the feeding value of forage crops.

A graduate of Iowa State College, Dr. Moore received his Master's and Ph. degree from Michigan State College. He was a member of the dairy department there for 12 years, after which he spent four years at the University of Maryland where he received the Borden award for his research on the chemical, physiological, and pathological relationships of vitamin A deficiency in dairy cattle. Dr. Moore joined the Bureau of Dairy Industry in 1945.

GUERNSEY TYPE CLASSIFIERS

The American Guernsey Cattle Club has named L. V. Wilson, Minnesota, and C. B. Finley, Iowa, official type classifiers for that breed succeeding M. G. Seath who resigned January 1 of this year.

A graduate of Iowa State College, Wilson has managed the Boulder Bridge Farm since 1926 and has served on the executive committee of the American Guernsey Cattle Club since 1933. He has been a member of the type committee 15 years and has judged many of the leading shows. Part of his time is now being devoted to classifying, and after October 1 of this year he will be classifying full time.

Finley, a University of Minnesota graduate, was field representative for the American Guernsey Cattle Club for 20 years and, like Wilson, was high individual in judging all breeds at the Dairy Cattle Congress Intercollegiate Judging Contest.

Both men have served as extension dairymen, Wilson in Minnesota and Finley in Iowa.

NAAB TO MEET IN WISCONSIN

The 1950 annual meeting of the National Association of Artificial Breeders will be held at King's Gateway Hotel, Land O'Lakes, Wisconsin, September 20, 21, and 22. Badger Breeders Cooperative is the host association.

The worth of a thing is best known by the want of it.

CORN CENTER DOIN'S by Olney

"What you need, Lem, is a set of these BFG Power-Curve tires."

Here's a new kind of tractor tire tread that gives you more traction, more power. It's the B. F. Goodrich Power-Curve tread. Tested side by side with other leading makes, this new tire outpulled and outwore them all! The new B. F. Goodrich tractor tire uses the proven open center principle plus curved cleats. The special curve reinforced at the center of the cleats, allows natural self-cleaning, a deeper bite and longer wear. See the B. F. Goodrich retailer next time you're in town. He will show you how you can save with the new Power-Curve tread.

An advertisement of The B. F. Goodrich Company, Akron, Ohio.

GRANDMA MOO says: CO-OP UNIVERSAL's RIGHT FOR EVERY DAIRY FARM because:

CO-OP UNIVERSAL HAS THE ONLY COMPLETE LINE OF MILKING MACHINES"

True for you, Grandma Moo! CO-OP UNIVERSAL offers standard Calf Nose single and double milking units—Short Tube Type and handy, efficiently designed Portable Milkers. There's also the CO-OP UNIVERSAL Milking Parlor where entire flow is automatically weighed, filtered, and conveyed from Teat Cups to Can Cooler. Washing and sterilizing is automatic, too. So for every dairy farm — from 6 cows and up — CO-OP UNIVERSAL'S the choice!

CO-OP UNIVERSAL standard Calf-Nose Milker Single and Double Units. Simple, trouble-free; sturdy, easily cleaned pail.

CO-OP UNIVERSAL Short Tube Milker Suspended from cow by 2 point, easily adjusted hanger. Stays in position.

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CO-OP UNIVERSAL'S Milking Parlor. Everything automatic—even to washing and sterilizing equipment. A great labor-saver.

CO-OP UNIVERSAL Vacuum Pump. Precision built. Famous for long, trouble-free service. Protected against dust.

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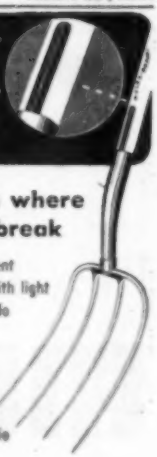


unbreakable where other forks break

Steel beam reinforcement gives super-strength with light weight, lively action. No premium in price.

The Union Fork & Hoe Co. Columbus 8, Ohio

Watch the New Seedings

C. M. HARRISON

KEEP a watchful eye on those new forage seedings made last spring. The winter may have been rough but spring weather can either make or break a new seeding. By careful checking on both the new and old forage fields during the spring season, plans can be quickly made or changed to fill the forage gaps caused by seeding failures.

Seedings often come through the winter in fine shape only to be badly damaged by flooding, ice sheet formation, or just plain freezing at night followed by warm sunny days. Waiting to look at the forage fields until the spring grain is all sown and seeded may delay the necessary planning for sufficient summer hay and pasture until it is too late to do a really good job with the annual crops which may be used.

Water Damage to New Seedings

The spring season is usually one of melting snow, heavy rainfall, and soggy or flooded fields. The top soil may thaw out while a layer of frozen soil still remains below, blocking effective water removal from the top soil. If this condition persists too long, the grass and legume plants suffer because of poor aeration, and smothering may result.

Flooding of course makes the condition worse where the entire plants are covered for any length of time. Occasionally a little work with a shovel to clean out a plugged watercourse or ditch will help to remove water from a flooded field in time to prevent too much damage. Alfalfa and red clover are affected quickly by poor drainage and flooding whereas alsike, timothy, and bromegrass can withstand a much longer period of flooded conditions.

Temperature and Damage

Even more damage to new seedings may be caused by the extreme variations in temperatures which prevail during the spring season. We may have several warm, sunny days followed by a period of below freezing weather. The days may be warm and the nights cold. Good maple syrup weather, freezing nights and warm days, is not good for new seedings.

The crown buds on alfalfa and clover start to grow when the days are warm and sunny and this new growth is frozen back when the temperature drops much below freezing. This alternate growing and freezing results in lowering the already depleted root reserves of the plant. Several such setbacks may completely deplete stored food and death results. This alternate growing and freezing uses up stored foods at a fast rate and the plant cannot replenish the stored food by manufacture during these short growing periods. Hence it is essential that they go into the winter with a large reserve food supply, sufficient not only to keep the plant alive during the winter but to help it survive these setbacks in the spring.

Heaving of Plants

As the plants are subjected to alternate growing and freezing back, and smothering from poor soil aeration caused by soggy soil and flooding, they become weakened. Side roots are pruned on tap rooted plants as the food supply diminishes until frequently only the tap root of plants, such as clover and alfalfa, is left. With the freezing and thawing, these cone-shaped roots tend to be lifted from the soil and the crown and part of the tap root is exposed. Heaving then may be a result of rather than a cause of damage to the plants.

When the plants start to "pop" out of the ground, they are about ready to die. An occasional heaved plant or a slight lifting of many plants indicates that trouble may be close at hand. Unless the freezing weather abates, the seeding may be lost. However, we frequently see plants recover which have been pushed out of the ground almost an inch just as freezing weather stopped. This spring weather cannot be controlled and damage is frequently severe. Early assessment of the damage is about all that can be done in the spring. If the damage is severe, plan to make use of the best available annuals for pasture and hay.

Which Annuals to Use

Once a seeding has failed, there may still be time to disk up the field and reseed it to spring grain. Between two and six million acres of grain are cut green each year as hay, to say nothing of the acreage pastured. Using the grain crops as hay or pasture makes it possible to make the forage seeding over again and still harvest a reasonable tonnage of emergency hay. Such practice although expensive is less expensive than a shortage of hay and pasture. Cutting or pasturing of the grain crop will do much to give the new seeding a good start.

Other Emergency Forages

Where damage to the forage fields is not determined early enough to sow small grains, other crops must be substituted. The foxtail millets make a fair grade of hay even though planted late in the spring season. As a pasture crop, these millets are of little value. Sudan grass is a far better emergency pasture crop and a poor hay crop because it is difficult to cure. Soybeans are a comparatively good hay crop as evidenced by the fact that one and one-half to five million acres are used for such purpose each year.

As a general practice, seeding a forage crop with the millets, sudan grass, or soybeans is not the best practice. These crops are planted late and competition for water in the dry summer period is all in favor of the annual crop and not the smaller seedling plants of the new seedings. Hence to get back as quickly as possible to perennial forages for hay and pasture it probably would be best to use the spring sown small grains which come off the ground earlier and give seedings a better chance.

So watch your new seedings in the spring and determine the damage as soon as possible.

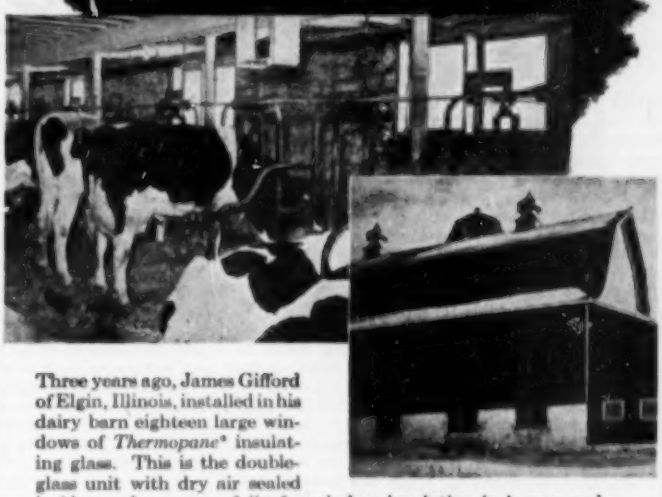
A Place for the Lid

Where to put the lid from a milk can when the strainer is setting on the can is sometimes a problem. One of my members places the lid in a pail containing a chlorine solution. This is a year-round practice that will help in keeping the bacterial count down.—P. N. KNAPP, tester Linn No. 2, Iowa, DHIA.

3 years prove the value of

SEALED WINDOW INSULATION

FOR DAIRY BARNS



Three years ago, James Gifford of Elgin, Illinois, installed in his dairy barn eighteen large windows of *Thermopane*® insulating glass. This is the double-glass unit with dry air sealed inside, used so successfully for window insulation in homes and other buildings throughout the country. Mr. Gifford chose *Thermopane* to get the benefits of window insulation without the bother of storm sash. Here's what his experience has been:

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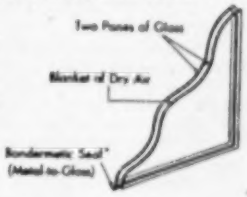
LESS STEAM AND FROST on the glass. The inner pane of the double-glass unit stays warmer—thus condensation is reduced. Windows stay cleaner—more daylight comes through.

LOWER MAINTENANCE. With single glazing, window condensation rotted window frames and cross sections, called for frequent repainting and replacing. With *Thermopane* these maintenance problems are decreased.

WARMER BARN. The barn is more comfortable, and a healthier place for livestock, as the *Thermopane* insulation helps keep interior temperatures more uniform.

DRIER BARN. Because the barn is warmer, the moisture-carrying capacity of the air is increased. Thus, more moisture is carried out by ventilation—a damp, cold barn is avoided.

Thermopane is likewise ideal for milking parlors, milk houses, hog farrowing houses, poultry houses and other buildings. It may be installed in windows that open, or in fixed frames. *Thermopane* is sold by glass and building supply distributors and dealers. Write for our *Thermopane* literature. If you have any problems of glazing farm buildings, feel free to consult us.



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Does 6 Hrs. Work in 3

Golden Rod All-Purpose Fence Tool

Weighs 8 lbs. Pulls ½ Ton

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EDITORIAL COMMENT

ARTIFICIAL DAUGHTERS

THE artificial breeding program was just getting underway when World War II began. Because of help shortages, few DHIA testers, and inadequate facilities, we have been slow in measuring the results of artificial breeding. It hasn't been until the past year or so that we have been accumulating enough records of daughters of sires used in artificial breeding associations to give us an accurate measure of what these sires were doing in the way of improving production in dairy farmer herds.

It has been reported that all daughters of proved sires in artificial breeding associations average approximately 430 lbs. fat. We would be seriously misled if we accepted this figure as the average that should be expected of all artificial daughters. In the first place, the 430-lb. figure was obtained from the first proofs of these proved sires. Normally, these daughters received every opportunity to do a good job in the herds in which they were tested. When the sire of these 430-lb. daughters is used on several thousand herds where the feeding and handling conditions are perhaps average, or a little better than average, it would be, indeed, surprising to find the artificial daughters approaching the 430-lb. level.

In New York State the New York Artificial Breeders Cooperative and the animal husbandry staff at Cornell University have cooperated to collect the DHIA records of all tested daughters of sires used artificially in the cooperative bull stud. We hope that we may soon have an article summarizing the results of New York's outstanding work. It is already known that all daughters of sires used in the New York stud average just a little better than 400 lbs. fat. Here, again, it would be misleading to assume that all dairymen in the Midwest, South, and West will have artificial daughters averaging 400 lbs. fat. Such may be the case but it is rather unlikely, in our opinion. The feeding and management conditions that prevail in New York and Pennsylvania are generally more favorable than may be found in other areas, particularly in the manufacturing milk markets. We believe that the daughters of sires used in artificial breeding associations may average considerably below 400 lbs. fat in some areas, and well over 400 lbs. fat in other areas.

In our March 10 issue we pointed out that six cows in Denmark were made to produce 909 lbs. fat where they had previously produced only 370 lbs. fat per year under normal farm conditions. True, this is an extreme example of what management can do in influencing the size of milk and fat records. The lesson is there, however, for those who want to profit by it.

Sire proofs are excellent tools and, in our opinion, almost indispensable to dairy cattle improvement at the present time. Like all good things, sire proofs and indexes are subject to misuse and abuse. They can be manufactured or tailored to reflect the wishes of the breeder. As with all records, sire proofs should be accepted for what they are, an indication — and an indication alone — of what the sire may possibly do. The most severe test of any sire is his use in artificial breeding associations. When he has proved himself desirable under what we might consider average or adverse breeding conditions in thousands of herds, he is truly a great bull and should be used to the full extent of his capacities.

Because of the excellent test of a bull through artificial breeding, we believe more associations should consider the selection of a few young sires by careful herd analysis, and sampling through artificial breeding associations. Outstanding sires so discovered will have been proved under reliable conditions at a comparatively early age. They stand to make a far greater contribution to dairy herd improvement than sires proved under natural one-herd conditions then reproved under artificial breeding conditions.

LOOK AT THE RECORD

WRITING in one of the mass national farm magazines, an author expressed grave concern because only one cow out of ten in the United States is bred artificially. If the author were aware of what has taken place in the dairy farming industry, he would not be amazed at only ten per cent but would be amazed at such a high figure.

In a century of promoting the use of registered dairy cattle, or purebred dairy cattle, we have still less than five per cent of our national dairy herd composed of registered dairy cattle. Similarly, for almost one-half a century we have promoted and tried to sell to the entire dairy industry the basic desirability of testing dairy herds in cow testing associations or dairy herd improvement associations. We have still to test five per cent of our dairy cows under herd test. Yet here we have, in the short span of ten years, a new development in dairying that has captured the fancy of dairymen to the extent that they have at least ten per cent of all dairy cows in the United States artificially bred.

The figures are not out for January 1, 1950, but on January 1, 1949, there were 316,177 herds, consisting of 2,412,160 cows, enrolled in 1,263 artificial breeding associations. In the calendar year 1948 there was an increase of 40.8 per cent in number of herds and 38.4 per cent in number of cows. What the increase is going to be for the calendar year 1949 is, as yet, unknown or unpublished.

We have been amazed that there have been so few failures or undesirable experiences with artificial breeding as it has grown like Topsy during the past ten years. Any business or industry that starts from scratch and in 10 years develops into a $10,000,000 to $12,000,000 business is not slow growing. Despite minor irritations and growing pains of artificial breeding associations, we believe they are the most significant development in American dairying since the development of the Babcock test and the initiation of herd testing back at the turn of the century.

PURE COWARDICE

WHEN the Senate-House Conference Committee made its report on the pro-oleo bill, it eliminated Senator Frear's amendment requiring that oleo be sold in triangular form. This amendment was one of the more important amendments approved by the Senate and sent to Conference Committee. Senator Fulbright, oleo's champion, accepted the amendment on the Senate floor. Immediately after its passage, however, the oleo manufacturers cried out with anguished screams of helplessness. The Conference Committee, of course, dried oleo's tears and gave way to its desires.

Here's just one more piece of evidence of the basic cowardice of the oleo manufacturers to sell their product competitively, honestly, and on its own merits. We fail to understand how anyone can work in an industry so obviously lacking in pride and principle. Instead of the oleo people accepting the triangular form as a badge of distinction and going out to promote the sale of a uniform, "high quality" product, they turn tail and scurry back in the shadow of the butter carton.

At least, the oleo manufacturers are setting one record. We believe they have set an all-time high for revolting, cowardly behavior in the business world.

OFF ON THE RIGHT FOOT

COTTON and grain acreage limitations are encouraging great numbers of farmers to go into dairying. Many of them are without prior experience in handling dairy cattle, producing good milk and cream, and operating a dairy farm on a profitable basis. Many of these new dairymen will suffer personal and financial disappointment because of poor guidance and leadership.

Established dairy cattle breeders, breed associations, and other dairy groups should be seriously concerned with the problem of getting new dairymen off on a sound footing. Of immediate and prime importance is proper financing. Decisions made at this time may result in a convenience or an unbearable hardship in the future. Most bankers are not well qualified to make fair and satisfactory loans for getting a dairy farm operation underway. This is particularly true in some sections of the South and Great Plains regions.

In one state with which we are familiar, dairy cattle breeders have initiated a program to help bankers make suitable loans to new dairymen. A concrete effort is being made to obtain and provide cattle of a suitable quality to give the new dairyman every opportunity to make good. Unfortunately, our reservoir of well bred cattle is all too small. Cattle backed by production records are too limited in number to satisfy all the needs.

A conversion from one-crop to livestock agriculture requires the cooperation of all farm people and farm groups in a given county or state. It requires, also, the understanding, assistance, and cooperation of business, industrial, and financial groups if disappointments and failures are to be averted. The job cannot be well done by any one group. It must be a cooperative effort.

AUCTION MARKETS

LIVESTOCK auction markets are coming in for considerable criticism from dairymen, veterinarians, and livestock sanitary officials. A great number of animals infected with various diseases pass through these livestock markets annually, move into clean herds, and subsequently cause an outbreak of disease. We believe that our Bang's disease control work is being hampered and injured by poorly supervised and regulated auction markets in many of our states.

In some areas strict legislation has been enacted to prevent these abuses. In certain other localities livestock auction market owners have individually taken action to clean up the situation and protect their reputations. We learned recently of one auction market in Mississippi that has started a very complete health program, involving examinations of all animals by a qualified veterinarian. The result has been that the auction market operator has been able to advertise his services, emphasizing the health status of the animal sold. We are told that the dairy cattle passing through his auction ring now bring from $25 to $35 more per head than they did before the health examinations took place. Certainly this operator must be well satisfied with his decision.

. . . . . BANKERS are going to pay more attention to the farmer as a businessman than to his collateral. Bankers have no use for wagons. They hate foreclosures. More and more, they are going to make loans to the farmer on the basis of his ability to operate his farm as business. That means, of course, that the farmers are going to have to supply the banker with businesslike information — records, accounts, and budgets.—JOHN L. LILES, JR., agricultural economist, Federal Reserve Bank of Atlanta.

Sudan for Emergency Pasture

I moved on a farm that will be short of pasture this year. Please give me some advice as to how I can get through this first year. I have thought of putting in 12 acres of Sweet sudan grass. The ground is run-down and we have considered putting in sweet clover to be plowed under. How much feed will 12 acres supply and should it be divided into two fields and alternated? How high should it grow before turning the cows in and what is the danger as far as poisoning is concerned?

Illinois R. S. H.

During the past few years there has been much favorable publicity about Sweet sudan grass. Agronomists in some states believe that Sweet sudan appears to be superior to common sudan grass in both production and grazing value, and it may eventually take the place of the old variety. Sweet sudan is more palatable than other varieties. In midwestern and eastern states, Sweet sudan has been much later in maturity and as a result, less productive than normal sudan. In Illinois, however, the yields of Sweet sudan have been much higher than those of normal sudan. The same has been true in New Jersey on limited trials.

As many of the trials have been conducted for only a short time, it is difficult to know what the ultimate answer on yields will be. At this time it would seem that in the warmer sections of the country production is equal to or superior to other varieties. In the colder regions, since it is slower to get started, resulting in a shorter grazing season — Sweet sudan is not as desirable.

One of the greatest advantages of Sweet sudan in the southern states has been its disease resistance. However, Sweet sudan does not seem to be as resistant to rusts and leaf diseases in some states as in others. It also should be borne in mind that Sweet sudan has a higher prussic acid or cyanide content, so some agronomists hesitate to recommend its use.

To more specifically answer your question, we can say that the main consideration should not be one of which variety to use, but assurance that you will put in some sudan pasture for July and August grazing. It is undoubtedly one of the best crops we have for emergency or supplemental summer pastures.

Since sudan is a warm weather plant, it should not be planted until after the ground warms up. In Illinois and other midwestern states planting may begin about May 1 to 15. The soil and seed bed requirements for sudan grass are the same as for corn. Like corn, it does best on fertile soils which have been fertilized. It will produce excellent growth on soils which have previously grown legumes.

In sections where moisture is plentiful, sudan grass should be sown with a drill at the rate of 25 to 30 pounds per acre. While this rate may seem excessive, lighter rates produce larger stemmed plants which are more difficult for stock to graze. However, in drier regions where moisture is a limiting factor, the rate of seeding should be 15 to 20 pounds per acre if the seed is to be drilled. For seeding in cultivated rows, 36 to 44 inches apart, two to four pounds of seed per acre will be sufficient. In rows 18 to 24 inches apart, four to six pounds per acre will be required. The best depth, everything considered, is about one inch but where the soil does not become packed the plants will forge the surface from depths of two, three, or four inches.

Sudan responds to nitrogen, but a high level of available nitrogen and a low level of available phosphorus in the soil tend to increase the poison content. Except on soils high in available phosphate, the crop may well be fertilized with 150 pounds of 0-20-20 drilled in with the seed.

Although it is best to graze sudan when about 15 inches high, cows will eat it even after it is headed out. The carrying capacity is from one to three head per acre, depending upon the fertility of the soil. On average land, three cows for each two acres of land is to be expected. It is an excellent idea to plant a second field ten to fifteen days after the first in order to provide for rotation grazing. In any event, we recommend that the field be divided with an electric fence so one field may grow while the other is being grazed.

Concerning poisoning, it is generally agreed that by keeping your cows off until sudan grass is 15 inches tall the first time, and then letting it come back to 10 to 12 inches each time thereafter, you can avoid any risk at all. There are some general precautions which will prohibit or greatly reduce possible "prussic acid" or "cyanide poisoning" in cattle. First, use only pure seed. Second, drill 150 pounds 0-20-20 or from 200 to 250 pounds of a phosphate-potash mixture with the seed. Third, do not graze sudan until it is at least 12 and preferably 18 inches high. Fourth, never let cattle graze short, dark green sudan grass. This is dangerous. Second growth, in particular, is high in cyanide when short and dark green.

Farm and Home Week Expense

I want to thank you for the fine writeups explaining the farm income tax situation. I am glad that you folks see a farmer's viewpoint.

When a farmer attends Farm and Home Week or any of the field days at the College of Agriculture, is it possible to deduct the expenses involved in attending these meetings?

Please accept my congratulations for the fine paper you are printing, giving us all the facts.

Wisconsin. V. KRESSIN.

If you are away from home over night attending a conference such as Farm and Home Week for professional improvement, you can deduct the expenses including meals and lodging.—I. F. HALL.

Poisoning Hedge

Regarding your article "Poison Undesirable Trees" we have a question. We are trimming a hedge row so it will be fence high. I was wondering if we put sodium arsenite on the limbs where we cut them off if this would have the same effect as the treatment you described.

Missouri J. R.

It seems doubtful that sodium arsenite solution applied to stubs of limbs at a 5- or 6-foot height would kill the plants. You will note that the directions in the article indicate that the row of gashes should be around the tree trunk just above the ground. In some cases where these directions were not followed and the row of gashes were made a foot or two above ground, sprouts subsequently developed from the root collar.

Because circulation of tree fluids which pass through sapwood and bark is destroyed in cutting off the stem, it seems doubtful, too, that much dieback of the plants would occur.—L. B. CULVER, University of Illinois.

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In ONE HOUR Or Less!

No matter how hot the weather, Frigidaire Milk Coolers chill a full load in one hour or less—and every can is cooled, right up to the top. This quick, thorough cooling helps you comply with the strictest milk production codes, and helps you get premium prices for high quality milk.

What's more, you get to keep the extra profits — because Frigidaire coolers are economical to buy and to use. Coil-and-rack type cabinets are powered by the Frigidaire Meter-Miser, simplest refrigeration mechanism ever built. The Meter-Miser is famous for thrifty, trouble-free operation—and *it's backed by a special 5-Year Warranty.*

Frigidaire's complete line offers 14 models, including one exactly suited to your needs. Seven coil-and-rack and seven drop-in type coolers, 3 to 12 can capacities. See your Frigidaire Dealer, or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside 12, Ont.

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Progressive, economy-wise dairy farmers have proved that, in new building or remodeling, PC Glass Blocks are definitely superior to the ordinary types of windows. For these glass blocks admit plenty of daylight, give effective insulation, afford complete sanitation. They keep the barn cool in summer, warm in winter. And they're draftproof, preventing the downflow of chilled air that causes frigid zones near the light openings of wood or metal sash. All this goes a long way toward keeping herds healthier and more productive.

And PC Glass Blocks have actual money-saving advantages: They hardly ever need repairs or replacements; they do away with painting — a sizable recurrent expense with other sash; there's nothing to rot, decay or rust. PC Glass Blocks are easily installed, too. Anyone who can lay brick, mix mortar, handle a trowel and plumb line can lay up a professional-looking panel of PC Glass Blocks.

Why not send for our free booklet? It shows you how PC Glass Blocks have been utilized in all kinds of farm buildings, and it contains easily-followed instructions on their installation. Just fill in and return the coupon.

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Save Time, Trouble Money . . . Help Control Mastitis

Help You Produce Cleaner, Better Milk

SURPRISED . . . AND SOLD ON KOWTOWLS

"I was really surprised to find a disposable, single service paper towel that could be used to wash udders and teats before milking," says Wisner Buckbee of Warwick, N. Y. "Kowtowls really do the job—don't go to pieces when wet. I like them and expect to use them from now on. We milk 50 cows here."

Kowtowls, the new sanitary, single service towels developed by Brown Company make washing and massaging of teats and udders before milking easier, more practical, more sanitary and less expensive.

To prepare a cow for milking, simply take a Kowtowl from its handy one-at-a-time dispenser. Dip in a clean, warm disinfectant solution, wash udders and teats, then wring out Kowtowl for massaging and drying. When you are finished throw the Kowtowl away.

That's all there is to it! No more tiresome washing, boiling, sterilizing old-fashioned, hard-to-clean cloths and rags. No wasted disinfectant . . . your solution stays clean . . . good to the last. And no chance of a Kowtowl spreading mastitis from one cow to another during the washing operation. Because each Kowtowl is used only once and then thrown away.

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For better, cleaner milk . . . lower bacteria count . . . the grade of milk inspectors want and buy at top prices, use Kowtowls.

You can get Kowtowls from your local milk plant or at most feed and dairy supply stores. We'll gladly send you free samples to try out—just fill out the coupon in this advertisement and mail it to us.

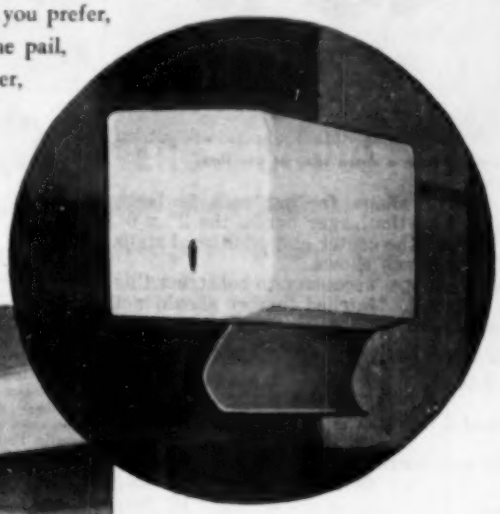
HANDY FOR YOUR OWN USE, TOO

Users say Kowtowls are a handy thing around the barn for their own use—to dry hands, wipe up tables, carts, etc., and they even find their way into the house.

Nibroc®

CONVENIENT . . . COMPACT

This handy, heavy gauge dispenser with baked enamel finish holds 300 Kowtowls. It can be attached to wall in milk room or barn or used on a milk cart. Or, if you prefer, carry Kowtowls in one pail, disinfectant in the other, as you work down the line. Either way you'll find Kowtowls easier, more sanitary and cheaper than old-fashioned cloths or rags. And look at the time you save with no more old cloths or rags to sterilize, boil and wash.



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Kowtowls undergo severe tests in the laboratory to assure uniformly excellent performance in the field. Latest and last word in dairy sanitation, Kowtowl is an exclusive Brown Company development.

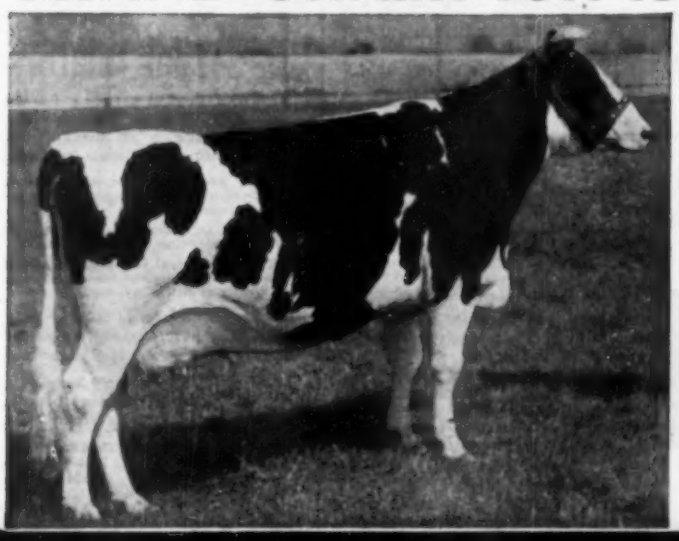
STRONG WHEN WET

Charles Lewis of Rock Tavern, New York, demonstrates that Kowtowls won't come apart or shed lint even when saturated in hot water and germicide. Mr. Lewis said, "These KOWTOWLS sure make it easy to get the cows ready for milking. They save the nuisance of a cart and extra pails for used cloths—we can just take two pails—one with fresh KOWTOWLS and the other with disinfectant solution and carry them right down the line with us. Besides being easier, I like the idea of using one on a cow and then throwing it away.

"I've found KOWTOWLS good and strong and they stand up in water—don't go to pieces when wet—you can practically scrub with them.

"I milk about 35 cows and I figure KOWTOWLS will save me plenty of time and trouble that used to go into washing and sterilizing cloths."

GRAND CHAMPION is a "KOWTOWL GIRL"



Brown's Mistress Becky was Grand Champion Holstein cow at Quebec Provincial Exhibition last Fall. She has already completed four lactations with a total milk production of 78,000 lbs., her 305 day records at 2, 3 and 4 yrs. of 14,000, 18,000 and 21,000 lbs. having made the Canadian Honor List in 1946, 1947 and 1948, and for type she is classified as Excellent. Experimental Kowtowls have been used on Mistress Becky for the last four years.

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FREE FOLDER For important information on feeding salt and trace minerals, write Morton Salt Co., P. O. Box 781, Chicago 90, Illinois.

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TRACE MINERALIZED SALT

Contains iron, copper, cobalt, manganese & iodine

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Hay or Silage Feeding Rack

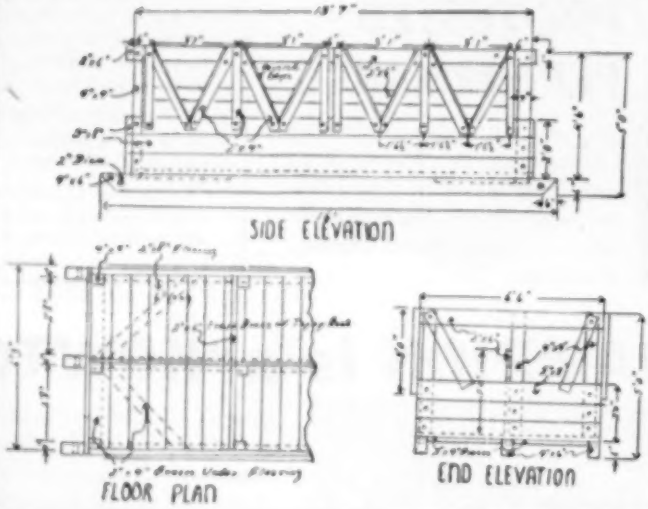
Feeding rack to accommodate at least a dozen cows at one time.

THIS rectangular type hay or silage feeding rack is large enough for a 30-cow herd. For the larger herds, the 2" x 6" cross braces may be moved toward the center and additional stalls added. There are 12 stalls in the rack shown.

Approximately 705 board feet are necessary to construct this rack. Rough material may be used. Matched lumber should not be used in flooring. Bolts are recommended.

MATERIALS

2 x 4's	Angle and vertical pieces	9 pieces	12' long
		2 "	8' long
2 x 6's	Center partition and 2 end pieces	9 "	14' long
		1 piece	8' long
2 x 8's	Flooring, side, and end boards	11 pieces	12' long
		9 "	14' long
4 x 4's	Corner posts	2 "	18' long
4 x 6's	Skids	3 "	16' long



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$30 a Cow — Save It

One cow produces about $30 worth of manure a year. How can you save it?

Here are the recommendations of Emil Truog, soils scientist at the University of Wisconsin:

One: To stop loss by seepage in the barn use concrete gutters and floors and use enough bedding to absorb all the liquid.

Losses from a year's manure may equal the cost of a concrete floor.

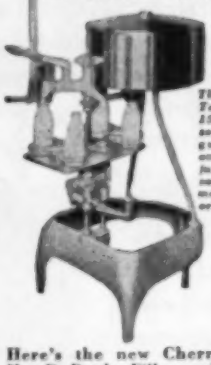
Two: Store manure in big well-packed piles or better yet in a covered shed. Half the value of manure is lost in six months if piled outside in loose piles.

Three: Plow or disk under stored manure as soon as it is spread to stop the loss of nitrogen by evaporation.

Fresh manure does not suffer this loss, an advantage to hauling out often.

One can pay back the loan of gold, but one dies forever in debt to those who are kind. — Malayan proverb.

Finest— Newest— Hand filler!



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Here's the new Cherry-Burrell Han-D Bottle Filler and Capper! Ideal for small as well as large dairy plants. The Han-D has sanitary, easy-to-clean contact surfaces of polished, non-corrosive, stainless steel — pays for itself in economy of operation.

Round or square half-pints — pints — quart bottles — even gallon sizes are all the same to the versatile Han-D Filler. Designed for fast, uniform two-valve filling and capping by just one man, the Han-D operates at a capacity of 12 to 14 quart bottles per minute.

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Keep Cows milking . . protect them with Dr. Naylor's MEDICATED

Teat Dilators

Medicated surgical dressings for the teat canal. Contain Sulfathiazole. The medication is IN the Dilators. They perform three distinct functions:

1. Carry antiseptics into teat canal to help combat infection and reduce inflammation.
2. Furnish soft, absorbent protection to the delicate lining of teat canal.
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Dr. Naylor Dilators fit large or small teats. They have a smooth waxed end for easy insertion and stay in the teat.

EASY TO USE — Simply keep a Dr. Naylor Dilator in the teat between milkings until teat milks free by hand.

Large Pkg. 45 Dilators $1.00
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DEPENDABLE VETERINARY PRODUCTS

Potatoes for Milking Cows

In an effort to determine whether or not potatoes can be fed successfully to milk cows, and also what effect potatoes may have on the flavor of the milk, two twelve-week feeding trials were conducted at the Montana experiment station.

Each feeding trial was divided into two six-week periods. One group of cows was fed potatoes in the first 6-week period and the other was not. At the end of the first six weeks, the groups were reversed. The cows that had not been fed potatoes received them, and vice versa.

The potatoes were sliced and fed three times daily at milking time with grain. They were field-run, sound, clean, and relatively free from dirt and sprouts. The pieces were one to two inches in diameter. The amount of potatoes in the ration was increased gradually, and when on full feed each cow received 24 pounds per day.

The cows fed potatoes remained in good physical condition and actually had more gloss and sheen to the hide and the hair than those not receiving potatoes. No trouble was experienced in getting them to eat the sliced potatoes providing they were not fed too large an amount in the initial feedings. Some of the cows craved potatoes after they were changed from the potato ration to the check ration not containing them.

When the trials had been completed, the following observations were made:

The average production of the 30 milking cows, equally divided in the two twelve-week feeding trials, showed a difference of only .3 of a pound of fat in favor of the cows fed potatoes and only 14.8 lbs. 4 per cent fat corrected milk in favor of the cows not fed potatoes.

The average gain in weight was 17.8 lbs. in favor of the cows not fed potatoes.

The average flavor score of the milk produced in both feeding trials was 39 for the cows fed potatoes and 38.9 for those without potatoes in their ration. Experienced milk judges recognized milk flavors scoring from 37 to 40 as good milk.

From the results obtained, it is concluded that sliced potatoes can be fed to milking cows without jeopardizing production, the flavor of the milk produced, or the physical condition of the cows, and without any serious loss of weight during the lactation period.

Previous investigations at other experiment stations indicate that potatoes in moderate amounts have a definite feeding value and can be fed in the ration of milking cows with good results.

Mangels for Dairy Cattle

I would like information concerning the advisability of growing mangels as a dairy cattle supplementary feed. We have a growing season of about 110 days between frosts. Our land is a Sutton-Whitman loam ranging from moist to very wet.

What type of soil is ideal? What comparative tonnage could I expect on land that consistently grows 15 tons of corn silage per acre on plenty of stable manure alone? What is the best method of keeping and feeding mangels.

Massachusetts. G. C. ZITKA.

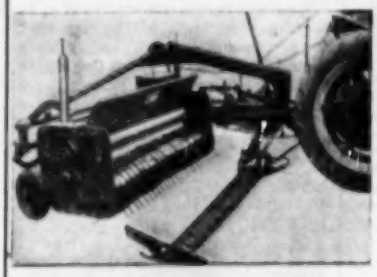
In sections where dent corn matures sufficiently for silage, mangels are usually a less economical feed for dairy cattle than is corn silage. This is because it takes about 150 lbs. of mangels to equal in feeding value 100 lbs. of silage from well eared corn. However, many dairymen like to grow mangels as a supplement to other types of roughage and grain. Mangels are best adapted to cool climates with an abundance of sunshine throughout the growing season. For best results, mangels should have a growing season of at least 150 days. However, they are quite resistant to frost injury and may be grown successfully where the frost-free period is not more than 120 days. These crops do best in deep, loam soil that is well supplied with organic matter and plant food. Clay soils are not desirable, as the soil bakes and poor stands result.

It is possible to get as much as 20 to 30 tons of mangels per acre on good soil and under favorable conditions, so they do produce a large amount of dry matter per acre even though they contain only 9.2 per cent dry matter.

Mangels can be stored either in a cave or cellar, or you can pile them up and cover them with straw and dirt close to the barn so that they won't freeze, and then feed them out during the winter. Unless you have a very large acreage, it is doubtful that you could raise enough mangels to feed 30 head of cattle all winter. The easiest way to feed them is to simply throw them into the manger whole. If you wish, you can cut them up just before feeding with an ensilage cutter or a corn knife, or they have regular cutters for this purpose. Mangels should not be fed until after they have been stored for a few weeks, as the freshly-harvested roots may cause scouring. They have a distinct advantage for dairy cows over rutabagas and turnips because there is no danger of tainting the milk.

Safety on the farm means practicing safety every day.

MORE PROFITS for you with HAYMAKER



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Haymaker Hay is Richer, Better Feed — Worth More!

The carotene content is higher, you get more hay per acre, and it's green and fragrant even after many months' storage. Haymaker Hay makes better feed for your stock and builds your profits.

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Whether you harvest Haymaker Hay to feed stock or for sale, you'll find that the higher value is reflected in the market price and you can avoid crop loss. In good haying weather, you "cut before seven" and "bale at eleven."

Haymaker goes anywhere!

Narrow roads or gates are no problem with a Haymaker. A quick simple adjustment, made from the tractor seat, swings the Haymaker into travel position so that it will follow the tractor.

Haymaker pays its own way.

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John BEAN
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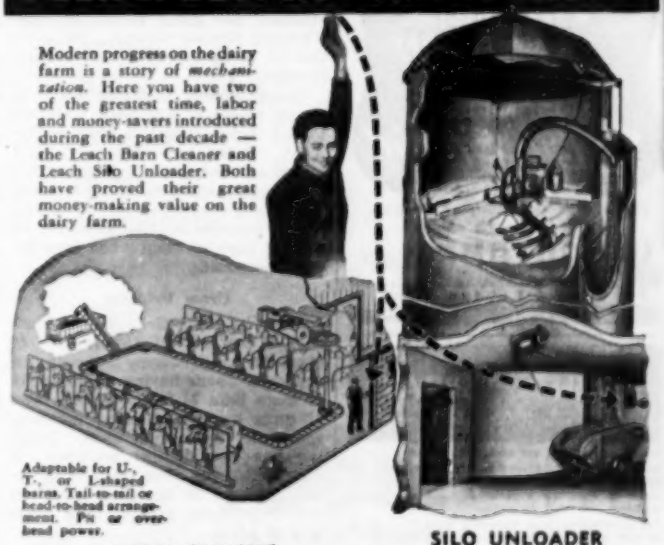
PUSH A BUTTON--NOT A SHOVEL

Modern progress on the dairy farm is a story of *mechanization*. Here you have two of the greatest time, labor and money-savers introduced during the past decade — the Leach Barn Cleaner and Leach Silo Unloader. Both have proved their great money-making value on the dairy farm.



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Everything is automatic . . . . Saves 200 to 400 man-hours a year . . . . Helps to meet Grade "A" milk requirements . . . . Ruggedly built to give trouble-free service . . . . Factory-trained service engineers cover all territories.

SILO UNLOADER

- Saves at least 200 man-hrs. a year.
- Throws down your silage while you do other work.
- Protects you against silo-climbing accidents.
- Increases milk production.
- Prevents silage waste.
- Handles frozen silage.
- Will pay for itself in one to two years.

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Now — during the coming months is a good time to install your Leach Barn Cleaner or Silo Unloader. You will want an estimate. This the nearest Leach dealer will give you without obligation. Just tell us on a post card that you're interested.

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★ MINERALS
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Painting your buildings keeps them in good appearance and stops costly deterioration.
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Dairy Barn Building and Remodeling

(Continued from page 219)

spiked together usually make the best girders. Built up beams generally have more uniform strength than solid pieces. The joints of the planks should be broken so they do not coincide and should be kept near the posts.

Where a heavy uniform load is to be supported, such as the hay load in a two-story barn, the girders should be placed to make the length of the joists on either side of them about equal. Avoid long spans for

Through the addition of a six-foot lean-to to this original 30-foot barn, it is now wide enough to drive through with a tractor drawn manure spreader and house two rows of cows standing with tails together.

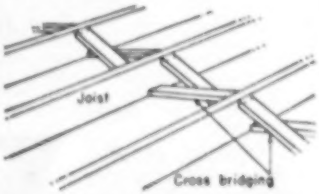
both joists and girders. With shorter spans heavier loads can be supported by a given amount of lumber. If you are building stalls for large cows, locate the posts at every second stall partition.

The strength of a beam depends more on its depth than on its width. A 2 by 12 inch joist will support a greater load than a 3 by 8 of equal length, although they contain the same number of board feet of lumber. It is advisable to use 2 by 10's or 2 by 12's rather than 2 by 8's or 2 by 6's for beams and floor joists. Likewise rough sawed lumber is stronger per given dimension than standard dressed lumber. In addition to being stronger it is usually cheaper.

Green lumber can be used in places where it will have a chance to dry before heavy loads are applied. Joists and girders of such woods as hard maple, white and red oak, beech, and elm can be placed much more easily when they are green because of the difficulty of driving nails in them when they become seasoned.

Cross Bridging

Joists having a clear span of more than 9 feet should have a row of cross bridging midway between the supports. Joists having a clear span of more than 14 feet need two rows of cross bridging dividing the total span into three equal units. Bridging has two distinct purposes: it distributes the load that may be concentrated on one joist to others and it prevents twisting and buckling of joists.



Cross bridging distributes the load that may be concentrated on one joist to others and prevents joists twisting and buckling.

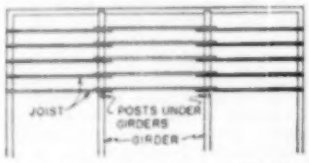
Bridging is usually made of 1 by 3 inch rough material. Any wood into which nails can be driven readily and which does not split easily is satisfactory. Bridging can be placed by nailing the upper ends securely before the floor is laid. However, the lower ends are best left unnailed until after the floor is laid because the weight of the floor tends to bring the top of the joists into alignment.

Posts in the dairy barn may be made of either wood or iron pipe. Four-inch pipes filled with concrete make excellent posts. Any pipe post will be much stronger and stiffer if filled with good, well rammed concrete. Metal posts should be painted to prevent rust. If wood is used, select the stronger hardwoods. Do not sink wooden posts in concrete.

Steel caps or malleable iron plates should be used on the top of pipe posts to prevent crushing of the wood fibers of the girder. It is advisable to use a bearing block made of a suitable hardwood between the steel cap and a built up girder. The bearing block to support a built-up plank girder should be the full width of the girder.

Insulating the Dairy Stable

Enough insulation should be provided in dairy stable walls to help prevent "sweating" and frosting on the walls and to keep water pipes from freezing. For the part of the Northeast south of a line extending from Buffalo, N. Y., to Portland, Me., two thicknesses of seven-eighths inch lumber with a layer of good building paper between has proved satisfactory for the side



Where heavy loads are to be supported, place girders to make length of joists on either side of them about equal.

walls provided there is not over 600 cubic feet of air space per 1000-pound animal housed in the stable. North of this line more insulation is necessary and storm sash and double doors are recommended.

Authorities in the Midwest recommend that the walls of small dairy stables have a thermal resistance value of from 4 to 6 and that those of large stables have a thermal resistance value of 3 to 4. A board

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one inch thick has a thermal resistance value of about one.

With the right amount of insulation in a well stocked barn, ventilation which is very important from the standpoint of the health of the dairy herd and from that of increasing the life of the dairy barn, can be continued even during severe weather and stable temperatures will not fall below freezing.

Concrete blocks made with sand and gravel provide less insulation than two layers of wood with paper between. Light weight masonry blocks furnish more insulation than concrete blocks made with sand and gravel; however, even these should be filled with an insulating material. Cinders from soft coal or commercial insulating materials can be used for this purpose. If cinders are used, they should be screened over a ¼" mesh screen and the fine material discarded. Two coats of aluminum paint should be applied to the inside wall to keep moisture from entering the insulating material.

A cement paint on the outside wall will make lightweight blocks more resistant to weather and also improve their appearance. The cement should be mixed with water to a consistency of heavy cream. A cement paint applied to the inside of the block before the aluminum paint is applied will cut down considerably on paint required.

Frostproof Windows

Enough windows should be provided to light the stable well. However, too many windows will result in a cold stable. The glass area should be not more than 5 per cent of the floor area. Storm sash are necessary to prevent frost from forming on windows in periods of cold weather. Glass blocks or double glass make windows relatively frostproof and, when all costs are considered, cost no more than ordinary windows and storm sash.

It is not advisable to plan on using tip-in windows as inlets for a dairy stable ventilation system. Construct individual inlets and keep the windows closed during the stabling season. A tip-in window used as an air inlet may cause drafts on the backs of the animals and may result in frozen water pipes.

Many older dairy barns are 28 to 30 feet wide and are too narrow for a drive-through stable. Such barns usually offer two possibilities for remodeling. They can be widened by building on a lean-to six to eight feet wide so that there will be sufficient room for two rows of cattle extending the length of the stable and a litter alley wide enough to accommodate a tractor drawn manure spreader, or the litter alley can be narrowed and a gutter cleaner installed, making an addition unnecessary. The dairyman faced with such a problem would do well to consider the cost of the two alternatives before remodeling.

Moving Posts

The remodeling of an old dairy stable may require the relocation of many posts. It may be necessary to use a truss to support a member formerly supported by a post. In some of the older barns not originally used for dairy stables it is common to find a row of posts in the middle of the barn. This central line of posts and the girder may be replaced by two rows of posts and two girders which will come over the stall platform.

In any building job, whether it be remodeling or new construction, a plan should be well thought out and put down on paper first.

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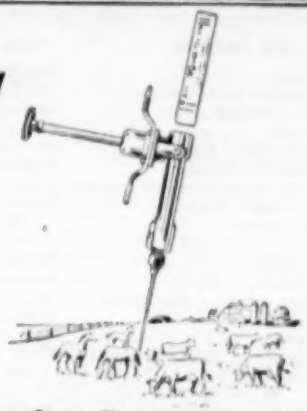

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Dairy Farm Home

With or Without Calories?

By Marian Pike

Ideas for serving variations of the same meals to suit the needs of both the fat and lean members of the family — without adding to the cook's work.

WHEN spring comes around again each year, the women in our family are dreading the warm sunshine which will cause them to shed their coats when they go in to town and reveal what has happened to their perfect 36's during the winter. Yet the voices of the menfolks are heard in the land calling for plenty of good food to give them the energy to get the plowing and the seeding done.

Now the roles of Jack Sprat and his wife may be reversed in your family. But the chances are that some of your family will have come through the winter with their silhouettes as trim as ever, while others will find their weight has been increased by too enthusiastic partaking of the rich and hearty winter foods — baked beans and brown bread, barbecued spareribs, steamed plum puddings, and the like.

Most of us who have this abrupt awakening in the springtime to the fact that our figures are all they should be and more, have nothing wrong with us. Our glands are OK. And our appetites are superlative. The five extra pounds lurking rear and center probably don't need the help of a magician to disappear. They will leave quietly and of their own accord if we cut down reasonably on food intake.

The best way to do this, of course, is to count calories while maintaining a balanced diet — including plenty of milk, some butter, lots of vegetables, very few starches, no sweets (some dentists say our teeth would be better if we never ate any sugar except that which is natural in fruits), and eliminating all "piecing" during meal-getting and all "cleaning up" of left-overs during meal-clearing up.

Almost any of us will cheerfully count calories for a day. But when we are busy with chickens and children and gardens and houses to clean, it is hard to sit down with that calorie chart and a paper and pencil every meal. So we give up.

People tell brave tales of filling up on raw carrots, celery, and lettuce before beginning their regular meal. It has not worked for us. The raw vegetables just pepped up our appetites or else gave us indigestion, for a raw vegetable, healthful though it may sound, is not easy to digest.

In our household we have evolved a plan which does work. The lean ones get the regular menus with all the trimmings. And, with a little ingenuity and not much extra work, the cook manages to leave off the trimmings for those whose figures need a trimming, to substitute for the sweets, and to keep the starches out of reach.

Jack Sprat, left, eats 1500 calories—his wife, right, 700. She saves 800 calories by eating less ham, a plain sweet potato; by drinking black coffee, skimmilk; by omitting cheese sauce, roll, butter, and ice cream.

FOR THE EATERS . . .	FOR THE DIETERS . . .
Baked ham	Baked ham (lean only)
Candied sweet potatoes	Sweet potato
Spinach — Cheese sauce	Spinach — Vinegar
Celery curls	Celery curls
Cloverleaf roll — Butter	Rye wafer
Whole milk (optional)	Skimmilk
Frozen red raspberries—Ice cream	Frozen red raspberries
Coffee Cream Sugar	Black coffee
(1,500 calories)	(700 calories)
• • •	• • •
Sirloin steak	Sirloin steak (lean only)
Baked potato — Butter	Baked potato — Butter
Asparagus salad — Mayonnaise	Asparagus salad
Rutabaga spears	Rutabaga spears
Whole milk	Skimmilk
Fruit gelatin — Whipped cream	Fruit gelatin
(1,100 calories)	(600 calories)
• • •	• • •
Roast chicken (2 pieces)	Roast chicken (1 piece)
Mashed potatoes — Gravy	
Buttered corn	Buttered corn
Lettuce — Blue cheese dressing	Lettuce — Lemon juice
Whole milk	Skimmilk
Apple pie	Fresh apple
(1,200 calories)	(500 calories)
• • •	• • •
Salmon salad	Salmon — Lemon juice
French fries	
Bran muffins (2) — Butter	Bran muffin (1) — Butter
Carrot sticks	Carrot sticks
Whole milk	Skimmilk
Custard with orange slices	Orange slices
(1,000 calories)	(400 calories)
• • •	• • •
Hard cooked eggs — Cheese sauce	Hard cooked egg
Toast (2) — Butter	Toast (1) — Butter
Beets — Harvard sauce	Beets — Vinegar
Individual tossed green salad	Green Salad with mineral oil
Whole milk	Skimmilk
Fruit cocktail — Macaroons (2)	Fruit cocktail
(1,000 calories)	(400 calories)

On this page are two series of menus — almost identical. The ones in the left hand column are heavy in calories; the ones to the right are low in calories. If you will look them over carefully, you will see that the cook is put to very little extra work to make these menus suitable for the lean and the fat.

Look first at the ham menu. Here Jack Sprat eats approximately 1,500 calories, a man-size meal, while his wife shaves her portion down to 700. The cook apportions to Mrs. Sprat a little less ham, being sure that she gets no fat. She serves her the sweet potato without the candy syrup, leaves the cheese sauce off the spinach, adding instead a little vinegar, substitutes a rye wafer for the roll and butter (though Mrs. S. could have a little butter on her wafer or sweet potato if she were eating a less rich type of meat than ham), and omits the ice cream, coffee cream, and sugar. Mrs. Sprat should drink her milk as there is no other use of milk in her meal. The milk is optional with Jack as he has milk in his cheese sauce and in his ice cream.

The steak double header is absolutely no extra work for the cook. She refrains from putting mayonnaise on Mrs. Sprat's salad and she leaves the whipped cream off her dessert. Though, of course, as in all the menus she must remember to give skimmilk to the heavyweights of the family and whole milk to the others.

For the roast chicken meal, the cook actually has less work because she need peel fewer potatoes. However, Mrs. Sprat may wish to substitute potatoes and gravy for the corn. If she does, she will be eating a few more calories and will be losing out on the vitamins in the yellow corn, but that gravy may be worth it to her. Then the cook substitutes lemon juice for the blue cheese dressing on the lettuce and tries to get by with giving Mrs. Sprat an apple instead of the pie.

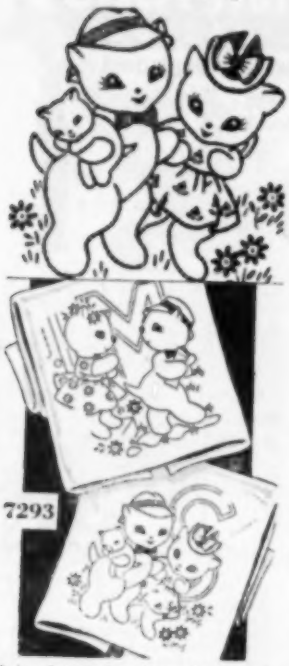
If Mrs. Sprat belongs to that farflung fraternity which simply cannot resist a piece of apple pie, she might busy herself with household tasks while the family is eating the first course, and then sit down with them only to eat the dessert. This is a practice which, for health reasons, obviously could not be followed very often and certainly not at all if the diet were to extend over any considerable length of time. But for one time only it might mean the difference between whether Mrs. Sprat keeps to a reasonable accurate facsimile of her diet or kicks over the traces altogether and gives up completely. Calories are calories, whether in chicken or pie.

In the fish menu, the cook serves salmon salad rich with mayonnaise to Jack, plain salmon and no French fries to Mrs. Sprat. She could substitute the custard for the milk.

The egg meal means, for the cook, saving out some of the hard-cooked eggs, keeping the Harvard sauce separate from the beets, and mixing Jack's individual salad with salad oil, his wife's with mineral oil. Very likely Mrs. Sprat will be able to taste no difference in the oils.

If Mrs. Sprat eats the ham meal for dinner and either the salmon or

Towel - A - Day



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egg meal for supper, she may have for breakfast half a grapefruit, a piece of lightly buttered toast, and black coffee, and still fall between 1,200 or 1,300 calories which should be a reducing diet for an active woman.

One big bugaboo of the would-be dieter, especially if she is the cook, is "piecing." It is easy to eat a few chunks of cheese as she prepares a macaroni dish or to wolf down a handful of nuts as she is stirring up the cookies. In this way, she adds 200 or 300 calories at each meal without even trying. But everything that enters her mouth, even lettuce, contains heat units which turn into energy or, to put it bluntly, fat.

Another pitfall is that those of us who are above average usually eat rapidly — unless we have on our company manners. So let's slow down. Dawdle, if we can. Savor every one of those fewer bites. If we don't watch ourselves, we can rapidly eat up our caloric allotment while the leaner members of the family are still tucking their napkins under their chins.

Be a Good Mixer

When tinting paint or enamel, don't add a dab of color to the whole can and expect to stir it evenly to one smooth tint. If you do, some of it will not be assimilated and will appear in ugly streaks when you least expect it. Thin the oil color with a little of the paint or enamel, stir thoroughly, then combine the mixture with that in the large container and blend well. See that the last streak of color is absorbed and then strain the whole mixture through a cloth strainer, a piece of window screening, or a section of old stocking.

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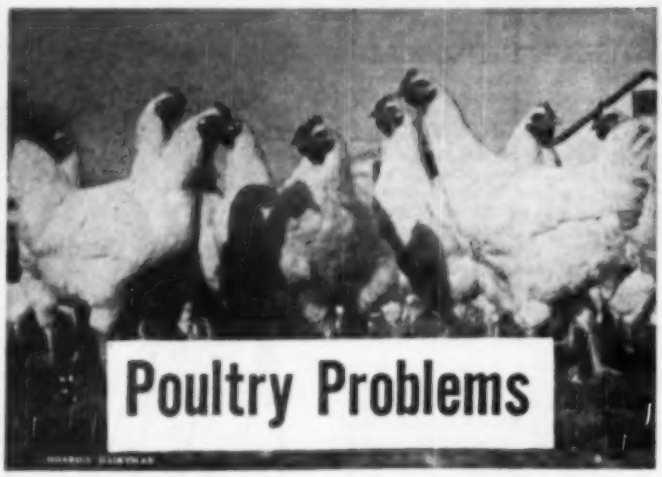

Poultry Problems

H. H. ALP

Baby Chick Feeding

Fortunately the 1950 chick feed bag is going to contain the best feed that has ever been made. We heard an interesting statement recently which was—that if a feed manufacturer today were to mix feeds according to the formulas we used to recommend 25 years ago, such feed would cost the poultryman from about $20-$25 more per ton than the quality feed of today. All this means that the chick grower doesn't have to worry too much about what feed to use but rather to concentrate his concern on how the feed is to be used.

In this connection the first essential is plenty of feeders. We would suggest one four-foot feeder for each 100 chicks and during the first day or two be inclined to put the feed on paper plates scattered around the pen close to the brooder, or anything else that would encourage early eating. However, once the chicks become accustomed to eating from feeders, discard anything like the use of paper plates. To get the most out of feed it is very important that the chick has plenty of drinking water conveniently located to the brooder and to the feed. Three or four drinking fountains wouldn't be too many in the average brooder room if the size of room didn't exceed 10 by 12 feet or thereabouts. The commercial brooding of broilers in large rooms would, of course, call for a little different arrangement of feeders and waterers than would be the case of a smaller type room.

The importance of early feeding cannot be overemphasized for it is essential that the chicks begin eating immediately once they are placed in the brooder room, and if this is accomplished there is little possibility then of the chicks eating the litter. Some folks take the precaution of covering the litter for the first two days and there is nothing wrong with the practice although it is not absolutely necessary.

Starting Turkeys

Turkey poults, for one reason or another, are not as easy to start on feed as are chicks. It would never do to say that they are dumb although at times one is tempted to say it. Some people claim they are nearsighted but regardless of the reasons it is extremely important to "baby" them into eating immediately.

A day-old poult, like any other young animal, requires a ration carrying considerable protein and it is for this reason that they must be educated to start eating immediately.

The following are sometimes used as "bait" to get them to start eating: chopped up green onions, cottage cheese, hard-boiled eggs, or oatmeal. Some growers have also used colored marbles to attract their attention to the feed but regardless of how it is done, it will pay to give special attention to seeing that they begin eating soon after being placed in the brooder pen.

Turkeys are quite curious and this is probably one reason why colored marbles are used to attract them to the feed. We have seen them go after binder twine, straw, in fact, just about everything they could get hold of but the feed.

In tempting young turkeys to eat one should be careful not to make the mistake of getting them into the habit of making their entire meal out of the "appetizer." For example, if oatmeal is used extensively in the beginning, you may end up with "spoiled birds" wanting it long after there is any need for it. After all, the regular commercial turkey starting mash is quite capable of growing out a good bird once they become accustomed to it and know where to get it. Raised feeders are probably more important for turkeys than they are for chickens because they are something like a giraffe in that they go around with their necks up and seem to favor eating out of a feeder that is up off the floor.

Turkeys seem to be very susceptible to committing suicide. They can get into trouble faster than anything else we ever had anything to do with. Falling into water fountains, suffocation in corners, piling in feeders, are just a few of the ways they can kill themselves.

Young turkeys like to roost at a very early age and it would be advisable to provide roosts, for once they get into the habit of using them it should be possible to cut down on the amount of heat and eventually cut it out entirely.

Litter to Use

There are a lot of good litters available including many commercial type litters. The one that we have always liked has been corn cob litter. Coarsely ground dry corn cobs is a very economical and satisfactory litter. The main requirements of a good litter are: it should be absorbent, provide an insulation covering for the floor, and be more or less free from dust.

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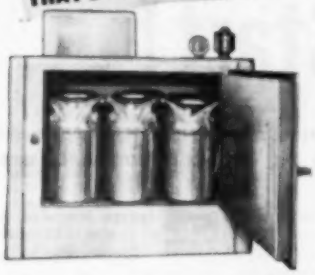

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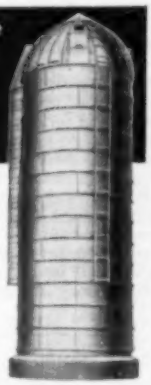

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THERE is an outstanding difference in the labor returns between high and low producing dairy cows. A comparison of the ten high and ten low producers in each of ten Indiana dairy herd improvement associations during 1948 demonstrates how wide these variations may be. Every cow in each group was on test 365 days during the year. The yearly averages for one hundred of the "toppers" was 13,209 lbs. milk and 579 lbs. fat; feed cost amounted to $115, leaving an income above cost of feed of $446 per cow. The one hundred low producers averaged only 4,114 lbs. milk and 171 lbs. fat; consuming hay, silage, pasture, and concentrates valued at $115. This left an income above cost of feed of only $74 per cow.

100 Cows Equal to 603

If the one hundred better cows would have been considered as a herd, the income above feed cost would have amounted to $44,600. To produce this amount with cows similar to those in the low bracket would have required a herd numbering 603 animals. Hoosier dairy herds numbering less than ten cows make up 91 per cent of the total number. Let us therefore use a herd of ten cows producing at the level of the one hundred best cows. To produce as much milk and butterfat would require not less than 35 head of the low producers. To yield as much income above feed cost one would need to provide feed, housing, and labor capable of handling a herd of 60 cows. From a labor standpoint, one man can handle ten of the better cows as well as doing a considerable amount of other work either in the field or around the farms. To handle the 60 cows would require two men to devote their entire time looking after the larger unit which in terms of income above feed cost is no better than the ten good cows.

If dairy herds were listed according to their ability to do work like a steam engine, one would say that the cow power of the small herd of good cows is six times as efficient as the larger herd so far as manpower is concerned.

Labor Return 6 Times Higher

The same principle may be illustrated in a little different way. Again using figures from Indiana dairy herd improvement associations, the labor return per hour received when a cow produces 15,000 lbs. milk is six times as high as when a dairyman spends his time caring for a cow that produces only 6,500 lbs. milk yearly. According to the same data, a cow producing only 4,000 lbs. annually constitutes a labor liability amounting to between 15 and 20 cents per hour. Since the average time to feed, milk, and manage the average Indiana dairy cow is placed at 120 hours, it is evident that many cows are boarders in every sense of the word.

During the last twelve months the selling price of milk in the Middle West has dropped more than the cost of labor. Comparisons made by the Illinois Experiment Station show that when corn is worth 90c per bushel and farm labor per month is $150, the cost of producing 150 lbs. milk in Northern Illinois dairy herds averaging 9,000—9,500 lbs. milk was approximately $3.25. Using the same prices for corn and labor, herds with annual production of 6,000—6,500 lbs. showed a production charge of $4.25 per one hundred pounds.

If farm wages remain high and milk prices remain steady to lower, the owners of herds averaging the higher levels of production are selling corn and other feeds marketed through their dairy herds at a higher price per ton or per bushel than the owners of lower producing herds. More hours of man labor are required to produce a given income. What the herd fails to do in cow power, labor expended in the herd, either hired or family provided, must make up the difference in man power.

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New Ayrshire Home

The board of directors of the Ayrshire Breeders' Association has recommended the erection of a new office building. Citing inadequate facilities, growing inefficiency because of crowded conditions, and the need for space for growth the directors appointed a building committee authorized to investigate sites in Brandon, Vt., and elsewhere, appoint an architect and draw up plans for the building. The building committee will then report to the board of directors at the time of the anniversary meeting in May.

The dry period before the second calving seems to result in greater milk production than does the dry period before later freshenings. Therefore, aim for at least a 60-day rest for the first calf heifer. A calf every 12 to 13 months results in greater lifetime production than when the freshening intervals are longer. —E. J. PERRY.

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Get Your Pig Project...

Off To A Good Start!

Here are some suggestions to help make your spring pig project a successful one.

IF YOU'RE a 4-H or FFA member with a spring pig project, no doubt you want to make a profit in terms of dollars as well as in knowledge gained from such a project.

One essential in making a profit is to raise a large litter from your sow. In the end, when all the feed and other costs are figured up, you can see that it takes part of a litter raised to marketing weight to let you break even. To make profit, you need to raise those extra pigs.

The steps toward raising a large litter of healthy pigs start long before farrowing time. To get a large, healthy litter you need a healthy sow with at least five and preferably six pairs of good teats, plus a number of other qualities. Assuming that you have a good sow, let's take a look at some of the things you can do now to make your spring pig project a successful one, if your sow has not already farrowed.

The sow needs plenty of exercise while she is pregnant. A sow that doesn't get enough exercise before farrowing may give you more trouble during and following farrowing, which cuts down your chances for a successful project. One of the best ways for a sow to get the proper amount of exercise is to forage in stalk fields or in a field where corn and soybeans have been hogged down. Or, you can scatter her feed some distance from the sleeping quarters.

Clean Up For Farrowing

The pigs will probably be farrowed in a shelter of some type, unless they come late in the spring. Central hog houses or batteries of movable houses have proven good on large scale projects as there is less possibility of pigs being exposed to infectious diseases.

Regardless of the type of shelter your sow will farrow in, it's a good idea to scrub the pen with scalding hot water and lye (1 pound of lye to 20 gallons of water). When the pen is dry, bed it with clean short straw. The sow should also be clean before she goes into the farrowing pen, so it's well to brush or wash off dirt and filth from the belly and udder before putting her in the pen.

Watch Your Sow Before Farrowing

You know that it's important to be on hand at farrowing time. You can get the jump on some troubles that may pop up if you watch your sow carefully before farrowing time, too. Usually when milk fills the udders, the sow will farrow within 24 hours. This is the time when constipation of the sow may be a problem. Feeding laxative feeds such as whole oats or bran, or a handful of linseed meal a day or two prior to farrowing, will help prevent this trouble. The sow needs plenty of water, too. If you shut her in the pen during the night, continue to let her out in the daytime for exercise. It's bad to keep the sow confined too long before farrowing, but putting her up each night has its purpose, too. She'll become accustomed to both you and the pen and will become more gentle. Cross or clumsy sows are often the cause of heavy pig losses. The right temperature of the house or shelter is important in this respect. Hog houses too hot or too cold cause sows to be restless. A temperature of 55 to 70 degrees is alright.

Save Those Pigs

Be with your sow when she farrows. That's one rule which is always good. If the weather is still cold or damp and chilly, you might help the new-born pigs along by drying them off and putting them in a basket with some warm bricks or a jug of hot water in the bottom covered with a gunny sack. If a sow farrows during the night, it's best to take the pigs away and return them in the morning. You might leave one strong pig with the sow just to keep her contented.

If the pen isn't warm enough for the pigs, you can use an electric brooder to good advantage. Another thing you might do is to put a 2" x 4" or 2" x 6" guard rail along the sides of the pen 8 inches from the floor and 6 inches from the wall to save pigs from being crushed when the sow lies down.

Watch the Feed After Farrowing

Feed your sow only dry oats or a little slop for a couple of days after farrowing. If she is constipated and shows a tendency to feverishness, one-third pound of linseed meal or some bran added to the slop will help. You can start heavier feeding four or five days after farrowing when most danger from fever has stopped. At the end of a week or 10 days the sow should be eating a full feed.

Try to Raise Every Pig

Some pigs aren't as strong as others when they are farrowed and they are the ones that may cause you to lose money on your litter. It's important to raise orphan pigs. The newborn pigs should be given every chance. They should be kept warm and should have the colostrum of the sow. If there are too many pigs for the sow to handle, or if some are weak, you may feed them colostrum from a cow if such is available. When the colostrum is not available, half a teaspoonful of mineral oil given to each pig will help clear the bowels.

If you have orphan pigs, you can feed them on cow's whole milk sweetened slightly by adding corn syrup and fed warm. You might use a nipple, although it's easy to teach pigs to drink from a pan. Keep the utensils clean. It's well to feed six times a day during the first three or four weeks, and three times a day after that. During the first week, one-half to one cupful a day; the second week, one to 1½ cupfuls; the third week, one pint; and the fourth week, one quart a day may prove satisfactory. Give the pigs some rolled oats or coarsely ground wheat and cracked corn at a week to 10 days of age. Also, you can substitute skimmilk for whole milk at four to six weeks. Give the pigs sunshine whenever you can.

Let's keep moving those pigs along with good feeding, too. Here's a formula for a good ration to self-feed free-choice with shelled corn in a creep for young pigs from two weeks to ten weeks old:

	Pounds
Ground corn (coarse)	900
Rolled oats	400
Wheat flour middlings (gray shorts)	200
50% meat and bone scraps	50
Dried buttermilk	50
Soybean Oil meal	350
APF-Vitamin Pre-mix	30
Ground limestone	30
Steamed bonemeal	20
Salt (iodized)	10
Trace minerals	4
	2,044

Chances are you've never before included an "APF-Vitamin Pre-Mix" in a ration. Mixtures including the animal protein factor should be readily accessible on the market.

Self-feeding of sows nursing pigs reduces labor, stimulates milk production, and helps keep the sow in good flesh. You may begin self-feeding 10 days after farrowing, although some producers leave their sows on self-feeders all the time. You may feed a ration of shelled corn, whole or ground oats, and some good protein mixture separately and get good results. You can replace some of the corn with barley or wheat, and one to two gallons of skimmilk or buttermilk is a good replacement for other protein feeds.

You can make a good feed mixture for slop with 100 lbs. ground oats and 100 lbs. middlings or ground wheat, plus an addition of 50 lbs. protein feeds. Feeding this mixture in thick slop with full feeding of corn is satisfactory.

Let's continue to watch our pigs carefully and keep moving them along. The sooner you can put the pigs and the sow on clean ground and in the sunshine, the greater your success may be. It may be possible when the pigs are a couple of days old. If you must keep the sow in the pen, turn the pigs into an alley or play pen for exercise each day.

A disinfected pen and clean, dry bedding and sunshine are the best preventives for many of the troubles that little pigs encounter. Another point—pigs are born fighters. If the litter is large and the pigs fight, clip off the long black teeth and swab the gums afterward with a weak solution of tincture of iodine.

You may castrate pigs any time after they are a week old. If you do it when the pigs are young, it will mean little setback to their growth. It's well to spread to various times castration, vaccination, weaning, and other operations, as two of these done at the same time may cause more setback in the rate of growth.

If you do not intend to rebreed your sow, you may not want to wean the pigs until they are 8 to 10 weeks old. If you wean them when they are four to five weeks old, you may suffer another setback in the rate of gain of the litter, and consequently, in the success of your project. When you do wean your pigs they should be eating corn, oats, and other feeds so well that they will suffer no loss in weight when you take them from the sow.

These suggestions don't mean that your project will be a smashing success if you follow them. But they are practical. Remember, give those pigs a good start and follow the job through. Watching them carefully and using some of the above suggestions to get them started right and keep them going will count a great deal toward a profit in both money and satisfaction.

THE END

Low aims and shallow thoughts are the real tragedies of life . . . If you would accomplish anything in life worthwhile and have a measure of happiness, then choose an ideal, be loyal to it, fight for it with abiding faith, and in time the realization is apt to come. Though it may never come, it matters not. Perhaps it is best that you never fully attain all your ideals. However, you will be a better person because of those ideals, because of the struggle you have made . . . Yes, ideals are the architects of character, the blueprints of the soul.—WILLIAM R. FRANKLIN.

When and How to Tile

(Continued from page 223)

outlet tile. The distance between the parallel line of tile will vary from 40 feet to 100 feet or more, depending upon the type of soil.

If the topography is undulating or rolling, a random system of tile drains is usually the most practical. The mains should follow the swales, and lateral lines and sub-lateral lines should branch off to drain the wet areas. This system is used where

Low hump in center of this picture indicates poorly drained area where the distance between tile lines, 100 feet, was too great.

most of the area is well drained, but fields have some wet spots because of differences in ground elevations or soil conditions.

A wet spot in a field may be due to seepage along the upper surface of an impervious subsoil which water cannot go through. This condition occurs on seepy hillsides and can often be recognized by seep water appearing along a straight or slightly curved line. In that case the seep water must be intercepted before it reaches the surface of the ground. This can be done by locating a tile line across the slope and far enough above the wet area so that the tile rests on the impervious soil layer and has at least two feet of cover over the tile.

A wet spot also may be due to upward seepage from gravel or other loose material which is under a tighter layer of soil. This problem can often be solved by running a tile line as deep as practicable through the seepy area, and in the wettest part sinking a well connected to the tile into the porous layer. This will relieve the upward pressure and the water will flow up through the well and out through the tile drain.

The most common type of farm drain tile in use today is made from clay or concrete. Perforated metal or fiber pipe has been used to a limited extent for agricultural drainage. It is important to secure a good grade of clay or concrete tile. Using an inferior grade of tile is poor economy. A well made clay or concrete tile will last indefinitely under normal conditions. It is not advisable to use concrete tile in highly acid or alkali soil.

May Cost $100 Per Acre

The cost of tiling is dependent upon the number of lateral lines required to drain a given area, the length of the main, material costs which vary some with different locations and trenching costs which vary widely. A complete system of mains and parallel lateral lines probably will cost around $100 per acre. Random lines in most locations will average between 20 and 25 cents a foot.

Periodic and continued maintenance is necessary if the tile system is to function properly and give the results intended over a long period of time. Each spring and fall the outlet should be inspected and any necessary repairs made immediately. The main line, at least, should be walked to see if any holes have developed over the tile. If holes are found, they should be dug out, the cause determined, and immediate repairs made. It might be a wide joint that is permitting soil to wash into the tile line, or a tile may be out of line or broken. Delayed maintenance is costly in crop damage.

Special and careful study is necessary to judge properly all of the various factors that must be considered in order that the tile system will be equal to all of the demands that may be made upon it, and still be constructed economically. Unless you are experienced in tile drainage, you should secure the services of a competent drainage engineer to plan your tile system. Your local soil conservation district, with the assistance furnished it by the U. S. Soil Conservation Service, can help you with your drainage problems.

A good tile outlet where surface water does not enter the ditch at the same location as the tile. The pipe empties the tile water into the ditch without washing around it causing cave-ins, blocking outlet.

A tile system represents a large additional capital investment in your land. However, if it has been adequately planned, properly installed, and given careful maintenance coupled with good farming practice on the land, it will pay a big return over a long period of time.

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CAPACITY 60 lbs. by 1/10 lbs.

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ORTHO PHARMACEUTICAL CORP.
Animal Industry Division, Dept. HD-3A
Raritan, New Jersey

Artificial Breeding

Tips on Breeding

VINCENT HINKLEY

BECAUSE there are so many dairymen depending entirely upon artificial insemination to settle their cows, and because there is a wide variation in breeding efficiency between herds, I believe it will help considerably to review some of the key points that are employed on New York farms where a satisfactory breeding record has been obtained.

First, I would like to point out that a satisfactory rate of conception is in the neighborhood of 60 per cent; or, in other words, six cows out of 10 will settle on the first service. To some, this may appear to be a low rate of conception. However, if one keeps accurate breeding records over a period of years on either natural or artificial breeding, the results will indicate that there is but little variation from the 60 per cent non-returns. During the past few months New York records show a better than 65 per cent non-returns from artificial insemination, on a 60-90 day basis. Judging from previous data, it would seem almost impossible to maintain a natural breeding record that is equal to this rate of conception, provided an equal number of services was used in the tabulation. At this point the future looks encouraging for artificial insemination.

Listed below are a few points to keep in mind for a more successful breeding record:

1. **Keep an up-to-date breeding record** of calving dates, abnormal conditions, heat periods, and dates of breeding. If an animal has an abnormal discharge or irregular heat periods, she is not liable to conceive easily, and it is usually advisable to contact a competent veterinarian for advice. Stable breeding charts can be obtained from your technician.

2. When a dairyman enrolls in this program he must **learn to detect heat periods accurately** and give a complete report of this information when placing a call for service. The inseminator will plan his calls each day according to the information which he receives over the telephone. It is very important for members to report cows as soon as possible after they are observed to be definitely in heat. Some inseminators, of necessity, can only take calls early in the forenoon or at night. For information concerning this policy, contact your local inseminator. A better rate of conception can be obtained by breeding from the middle of the heat period up to six hours after the end of such activity. However, occasionally it may be necessary for an inseminator to breed some animals during the early part of the heat period. Heat periods are, on an average, approximately 17 hours long, although this may vary with individual animals.

3. **During the winter months one should arrange to have the cows that are expected to be in heat outside for a few minutes each morning and night.** This will help considerably to detect the cows that are in heat, and it is believed that the exercise will aid in bringing on normal heat periods. At any rate, dairymen who follow this procedure in their herds are not affected with as many delayed returns.

4. **Correct timing of insemination** is one of the most important factors contributing toward successful artificial breeding results. Cows that are observed to be in heat at night for best results should be bred during the fore part of the next day. Cows that are observed to be in heat during the morning should be bred during the afternoon of the same day.

5. Experimental results have taught us that **cows should not be bred back too quickly after freshening.** It is a better herd health practice to allow 60 to 90 days after calving for the reproductive system to regain proper condition for breeding.

6. If a cow has had trouble calving, have her examined and treated by a veterinarian before calling the inseminator.

7. Your technician will do everything possible to settle cows with a minimum number of services, but he must have help:

a. When placing your calls, give all of the required information so your inseminator can plan his route to give the most efficient service;

b. Report your cow for service as early as possible;

c. Have the cow properly tagged if there is more than one in the barn;

d. Leave the registration papers and money at a prearranged place in the barn.

Your neighbors have cows to be bred before and after the technician visits your farm. **Timing is important to them also,** so do all you can to help the technician make his rounds promptly. Cooperation with your technician will result in greater satisfaction for all.

The author is director of field supervision for the New York Artificial Breeders' Cooperative, Inc. This article appeared originally in the November 1949 issue of "New York Artificial Breeders' Co-Operator."

Livestock rations must be palatable as well as balanced to produce best results.

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The Champion Bacon Hog of the World
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Large feed capacity enables Holsteins to utilize large amounts of home-grown feeds to maintain top production. They have the capacity for greater Vitamin D intake and convert carotene into more true Vitamin A than do the smaller breeds.
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GET YOUR NEXT HERD SIRE
from Aggieland Ormsby Pietertje, our Senior Herd Sire. His sire and dam are classified Excellent; his dam and sister made the 1948 Minnesota state records in H.I.R.
FOOTHILLS HOLSTEIN FARM, Papillion, Nebr.

THE BULL, EAR TAG 9042, born February 28, 1949. His dam has 780 lbs. of fat in 335 days on 3-time-milking.

Carnation Consigns
A BULL, A COW and 2 HEIFERS
— TO THE —
OREGON STATE SALE — Hillsboro, Oregon, April 3, 1950

THE BULL Carnation has consigned to this sale is a son of the Gold Medal sire, Hallrose Progressor (classified "Excellent".) The dam of this bull is an outstanding show cow, a daughter of the 3-time All-American bull, Carnation Governor Imperial. Her dam is a 776 lb. daughter of an 832 lb. cow.

THE COW, consigned, a daughter of many times Grand Champion Carnation Ringleader, has 602 lbs. of fat as a 2 year old. She was born July 2, 1945 and is due to freshen April 17, 1950, to Carnation Prime Minister.

ONE HEIFER, consigned, (Ear Tag 5797, born September 26, 1948), is a daughter of Hallrose Progressor out of a daughter of Carnation Black Magic.

THE OTHER HEIFER, (Ear Tag 5835, born February 14, 1949), is a daughter of the Junior Champion Show bull, Carnation Homestead Revelation. His dam is from a 754 lb. Class B daughter of Sir Inka May.

Send At Once for Current Issue of Carnation Milk Farm News Giving Latest Complete Data on the Families Behind These Animals.

Address:
CARNATION MILK FARMS,
1475 Stuart Building,
Seattle 1, Washington

Carnation Milk Farms

CARNATION ROYAL IMPERIAL

This month we have a son of Carnation Royal Imperial born Oct. 15, 1949 whose dam has an A.R. record of 556.8 lbs. of fat and 15,468 lbs. of milk on 2X milking in the herd under ordinary farm conditions.

For picture and pedigree write

STOFFELL'S MILK FARM
R. No. 12 Knoxville, Tenn.

HOLSTEIN and GUERNSEY

Choice selected Grade Springer Cows and Heifers. Large supplies always available. Recently Negative to T.B. and State Laboratory Bang's test. Truck lots or carloads. Quotations on request. We do not handle any young calves.
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Ohio's Largest Licensed & Bonded Distributors

2 TOP NOTCH BULL CALVES 2
Born in February 1949. Both by Pabst Embel Wayne, 4% proven sire, whose A.R. daughters are making exceptional records and testing from 5.7 to 4.1%. No. 1 Dam, Lashbrook Leah Ormsby (V.G.), 537 lbs. fat in 305 days, 3.7%. Nine nearest dams ave. 4% test. No. 2 Dam, Lashbrook Patricia Ormsby, 452 lbs. fat, 305 days, 3.7% test. Both extra good individuals, priced $500 and $500 respectively. Send for pedigrees and photos.
A. J. LASHBROOK Northfield, Minnesota
(Accredited and Certified Herd)

38th SEMIANNUAL

Michigan State Holstein Breeders Sale

TO BE HELD AT MICHIGAN STATE COLLEGE

EAST LANSING . . . APRIL 6, 1950

AT 12:00 O'CLOCK NOON

75 head of top cattle from Michigan, several cows classified "Very Good" with records from 500 to 700 lbs. of fat. Eight outstanding bulls from high record cows and popular bloodlines. Plan now to attend one of the top State Sales in the nation. Sponsored by the Michigan Holstein Breeders Association, Inc.

GLENN CASEY, Sale Manager, Williamston, Mich.

COMPLETE DISPERSAL OF INTENSELY BRED CARNATION HERD

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TB Accredited - Bang's Tested - Calf Vaccinated

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In the Pavilion

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SATURDAY,
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60 REGISTERED HOLSTEINS

The **Kirchhoff Herd** is the result of a long-time breeding program in use of five sires purchased from **Carnation Farms**. Featuring 27 daughters of CARNATION IMPERIAL MAGIC, high-record son of "Black Magic" who is proven with D-D comparison—plus 73 lbs. fat. Also daughters of other Carnation-bred bulls, and showy daughters of **Pabst Comet** and **Wisc. Fobes Great Viscount**. Also Selling **Carnation Progressor Redeemer**, son of "Progressor" from dau. of Governor of Carnation. Ten mo. old. Added Feature: 12 head from Twin Silo Farm consigned, mostly bred to 700-lb. son of **Pabst Roamer**.

A. W. PETERSEN, Sale Mgr. OCONOMOWOC, WIS.

Pabst Roamer "Excellent" Gold Medal Proven Sire

SONS OF PROVEN SIRES AVAILABLE

Wisconsin Admiral Burke Lad's (V.G.) transmission of high production is inherited by his sons, Pabst Roamer (Ex.) and Pabst Regal (Ex.), as shown by these averages of their daughters—Burke's 64 daughters average: at 2 yrs. 4 mos. 17,094 m. 5.67% 625.2 f. 3X. Pabst Roamer's 40 daughters ave.: at 2 yrs. 4 mos. 17,959 m. 5.7% 661.9 f. 3X. Pabst Regal's 14 daughters ave.: at 2 yrs. 5 mos. 17,986 m. 5.77% 676.7 f. 3X.

Young bulls carrying Burke breeding are available to head your herd. Semen also available. Write for terms.

PABST FARMS, Inc. Acc. & Neg. Oconomowoc, Wis.

PLUS PROVEN HERD SIRE . . .

"GINGERBREAD MAN"—Increased Fat, Test and Milk on 6 Herd Test pairs—Index: 637 Fat, 4.23%, 2x, 305 days; rich in Sir Bess Ormsby Fobes blood. **Sire:** Increased Fat, Test and Milk on 16 Herd Test pairs—Index: 511 Fat, 4.57%, 2x, 305 days.

Write us about his sons from 2x Herd Test dams with records to 1079 Fat.

SCOTT MEYER Hannibal, Mo.

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E.T. 356 and E.T. 348, one to Iowa, the other to Nebraska. Fine calves—gone to good herds. We predict they will give a good account of themselves.

But we have more fine bull calves—splendid type and backing. Write for information.

THE W. T. RAWLEIGH COMPANY
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HOLSTEIN HEIFER CALVES

from 2 to 6 months old, sired by Rag Apple bred bulls of Northern Illinois Breeding Association from high testing dams up to 600 lbs. of fat on 2X. Also a few good bull calves.

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Individually selected Holstein dairy cattle. Top grade springing and fresh cows, also open, bred and springing heifers at

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HERD SIRE PROSPECTS

Harrelwood King. Born Feb. 1948. A grandson of the **GOVERNOR OF CARNATION**. Dam now milking 100 lbs. a day on A.R. Write for prices and information.

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Purebreds and grades, many of Pabst, Carnation or Rag Apple blood lines. Selected from the best herds in the state of Wisconsin where better purebred sires have been used for over 30 years. We cover fifteen of the leading dairy counties in Wisconsin.

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For good Holsteins, either registered or grades—one or a carload—come to Jefferson County, Wis. Let us quote you prices on quality cattle from healthy herds. Free Seldman's service.

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More **PROFITS** because

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Five impartial tests prove that Jerseys are the most economical producers of butterfat. Records show that Jerseys have the lowest feed costs.

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Tell Us What You'd Like And Be Surprised How We Can Make Your Dreams Come True.

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Our Previous Group Sold Like Hotcakes. Don't Miss Getting Your Heifers From Our Great Producing Herd.

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By Proved Sire - From Good Record Dams

We offer sons and grandsons of GOLDEN DREAM FR., a proved sire whose first 21 daughters average 519 lbs. fat, and from classified (Herd ave. 87% +) cows with official 2X records of 500 to 800 lbs. of fat. Write for further information and for a copy of our free Golden Dreamer booklet.

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JERSEY BULL CALF

DROPPED SEPTEMBER 28, 1949

Sire: Brampton Royal Noble Alm Classified "Excellent." A 4-Star son of Mary's Alm. **Dam:** Royal Valiant Beauty Classified "Very Good." H.I.R. record of 577 lbs. B.F. (M.E.) in 305 days at 5 years of age. Has produced 1550 lbs. B.F. in her last three 305 day lactations.

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Offers two fall bull calves. Both out of dams over 3,000 pounds of butterfat and still going strong. If interested in PRODUCTION write for pedigree and details. FRANK B. ASTROTH, Rt. 1, South St. Paul, Minnesota.

PIXY FARM Ten of Gold bred bull calves up to serviceable age. The herd is producing at a Ton of Gold rate. '48 average 515 lbs. fat; '49 average 519 lbs. fat. Every cow milked 4 yrs. or more can qualify for Ton of Gold.

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100 Jersey and Guernsey Springer Cows. All TB-abortion tested. Special attention to order buying. W. L. BUSH, Springfield, Mo. Phone 986, Night Phone 151, Rogersville, Mo.

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Gold Star Herd. Winning in succession Highest Production Awards State of Georgia over all breeds. Choice bulls and heifers from cows 5,000 to 13,000 lbs. milk, 400 to 700 lbs. fat. Milked Twice Daily. HARRIS PEDIGREE FARM, Box HD, Pelham, Georgia.

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Very Good Serviceable Bull

FOR SALE—Rockingham Peerglenn, born Apr. 14, 1948, double grandson of Rockingham Prince Hollister. Sire, Rockingham Peer has 12 A.R. daughters, 3 A.R. sons, 3 PR sons. Dam, Rockingham Holliglenn traces twice to Rockingham Maid; 772 lbs. fat at 6 years. 1st Produce of Dam Class at Topsfield '48. One daughter on test milking over 60 lbs. A very good buy. Write

D. G. Tenney, Owner Salem, New Hampshire
ROCKINGHAM FARM

1904 FRITZLYN FARMS 1950

FRITZLYN FLASHMAN, dropped 9/5/46

Sired by Fritzlyn Flash. Grandson of Caumsett Flashlight who just had a daughter finish with 731 lbs. of fat in Jr. 2. Dam: Fritzlyn King's Roseate. This son is a double grandson of Antietam Gypsy King who sired Fritzlyn King's Jeanette that will finish with 19,200 lbs. of milk and 860 lbs. of fat sold for $6000.

FRITZLYN FARMS Pipersville, Penn.

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Mount Ararat Noble Hyperion, born August 19, 1948, is a show prospect backed by excellent production. His sire, Cesar Muriel's Elbon, combines production, very good type and great udders in his pedigree. His dam, a show heifer as a two year old in 1947, has an excellent record and is on test again. She is by Mount Ararat Royal Valor, one of our proven herd sires whose daughters are doing very well indeed. Write for complete information.

MT. ARARAT FARM, Port Deposit, Maryland

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FOREMOST IN NAME and BREEDING FAME

Head your herd with a Foremost bull that is backed by generations of the breed's best bloodlines—a bull that is linebred for both type and high production. We always have for sale some very desirable young bulls. Write us or better still come to the farm before you buy your next herd sire.

FOREMOST GUERNSEY ASSOCIATION, INC.
Hopewell Jct. (Duchess County), New York
J. C. Penney, Pres. W. K. Hepburn, Mgr.

FOR SALE

Bull, born May 1949. Sire—Goldspring's Romulus Anchor, 9 AR daughters proven for both type and production. Dam made 19444M 565F 4r2 305C 2x. 14052M 776F 8r3 365C, on retest at 6 years and has in 258 days 11505M 579F. Two nearest dams average 14072M 778F. Also a few well bred heifers.

YARBELL GUERNSEY FARMS
Smithville Flats New York

13th Missouri Guernsey Sale

Monday, April 24, Columbia, Missouri
12 Noon, University Livestock Pavilion

55-60 HEAD OF FOUNDATION ANIMALS

20 Cows and Fresh 2-yr.-olds—Many with A.R. and H.I.R. records.

18 Bred Heifers—Many by proved sires and out of good cow families. In calf to well known sires.

14 Open Heifers—Popularly bred and many show prospects. Out of dams with records to 657 lbs. fat. Many calfhood vaccinated and negative.

6 Bulls—The herd improving kind. By proved sires such as Gayhead's Imperial, McDonald Farms Industrious, and from good cow family dams with records to 810 lbs. fat.

Health Certificates Furnished All Animals

Write for catalog:
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FOR SALE—Bull calf of service age by McDonald Farms Gay Prince 307811 AR and out of "Very Good" cow with 16860-830-6 yrs. pending. This calf is nice! For Pedigree and Price Write:

BEACH RD. FARMS
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BRANDTJEN FARMS

breeding for: LONGEVITY, TYPE and PRODUCTION. 18 years of herd building, 14 years of A.R. herd testing, 44 cows in the herd with 86 records, average 449# BF, with 5.16% av. test. With bull calves arriving 3 to 1, this is an opportunity for you to make our bull lock your bull opportunity. Several calves from 600# record dams on 2x.

BRANDTJEN FARMS, Farmington, Minnesota

Annual Spring Sale

REGISTERED GUERNSEY BULL CALVES

from Selective Breeding. Free leaflets available.

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REGISTERED GUERNSEY BULL CALVES

From dams with records from 450 to 700 lbs. of fat on twice-a-day milking. Sired by Royal of Wayland and Langwater Prize whose dams have records of over 800 lbs. of fat. These are very well built calves with the best of production blood and priced to sell.

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Buy . . .
U. S. SECURITY BONDS.
"AMERICA'S SECURITY IS YOUR SECURITY."

COMPLETE GUERNSEY DISPERSAL

APRIL 8, 1950

DONMARICH FARM
L. G. SIMPSON & SON
PEORIA, ILLINOIS

5 BULLS, 18 COWS
8 BRED HEIFERS
8 OPEN HEIFERS

Rich in the blood of May Rose breeding. Caumsett Farms bulls extensively used as herd sires. TB and Bang's free. Herd on AR test with records to 700 lbs. fat on 2x milking.

For Catalogs, Write
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108 East Wilson Street
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SEVENTH IOWA GUERNSEY BREEDERS SALE

Dairy Cattle Congress Grounds, WATERLOO, IA., APRIL 21, 1950. All Iowa Cattle. 50 females, 20 cows, 15 close up heifers, 10 bred heifers, 5 heifer calves. 6 outstanding bulls serviceable age.

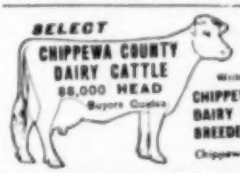
All cattle have been inspected and selected for this All Iowa Sale from leading herds of the state. The 6 bulls are tops to suit the most discriminating buyers, with breeding to suit. All females with high records or from high record ancestry. 5 heifer calves suitable for 4-H or F.F.A. projects. For catalogues write.

C. H. Jennings, Mgr., Iowa City, Ia., R. R. 4
IOWA GUERNSEY BREEDERS ASSN., INC.
Sale Headquarters, Hotel Russell-Lamson, Waterloo. Make reservations early. Banquet April 20, 6:30 p. m., Hotel Russell-Lamson.

Young Bulls For Sale

Backed by type breeding and records. We are offering for sale sons of our herd sires, Green Meads Proud Gallant, Sierra Manor Magnet, R. Lane's Proud King. Sires' dams have records from 614 to 926 fat. Also some choice heifers. Write today for full information.

R-LANE FARMS, BASSETT, WISCONSIN
J. H. Rustman, Owner Roy Seitz, Manager



GUERNSEY SALE

LA CROSSE COUNTY GUERNSEY BREEDERS ANNUAL SPRING SALE

THURS., MARCH 30

WEST SALEM, WIS.

135 HEAD. High grade and registered Guernseys. Choice consignments.

VILAS E. YOUNG, Sec., West Salem, Wis.

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GUERNSEY BREEDERS ASSOCIATION
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BETTER GUERNSEYS

Purebred and grades with outstanding production and type. Purebred bulls that will increase the value of your herds. T.B. and Bang's tested. Service to buyers is free. JEFFERSON CO. GUERNSEY BREEDERS' ASSN., Fort Atkinson, Wis.

FOR SALE Grandsons of Langwater King of the Meads and Langwater County Squire and out of Bournedale Rex and Langwater Africander bred dams.

TOM COOPER FARM Ardmore, Okla.

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IMPROVE YOUR DAIRY HERD

Three of our best registered Ayrshires are calving soon. Take a bull calf, use him until 3 years old free. CLARENCE CORKWELL & PAYNE, Mt. Sterling, Ohio.

AYRSHIRE BULL and Heifer Calves

One to six months of age. Bulls are grandsons of Neshaminy K Treebet "Excellent" two World's Records and Penshurst Jim Approved and out of high record granddaughters of Penshurst Advancer Approved. Prices $150.00 to $250.00. Send for sales list.

E. FORREST & SON, Anchor Mere Farm
Litchfield, Connecticut

AYRSHIRE BULL CALVES

Choice Pedigreed Ayrshire bull calves by proven sires and out of cows classified for type and with good production records. Write for pedigree, prices.

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Bred for type, production, quality. Sired by top ranking approved sires and out of high producing dams. Write:

REIDINA FARMS, Newtown, Pennsylvania

Ayrshire Bull Calves

Bred for Type, Production, Test, Disposition and Longevity by Preferred Pedigreed bulls; from tested and typed dams. Let your next herd sire come from Carefree; let him convince you.

CAREFREE FARMS
Traditionally The Best
New Haven Indiana

AYRSHIRE BULL CALVES

FUTURE HERD SIRES

by Double Approved Sires; from tested and classified dams.

HOOSIERLEA FARMS
Franklin, Indiana

FRANK LUHRS DAIRY COW MARKET

We have large selection on hand.

SOUTH ST. PAUL, MINN. La Salle 1458

BROWN SWISS

GOOD BREEDERS SELL TOP BROWN SWISS AT

The WAUKESHA SPRING SALE

FRIDAY
MAR. 31

WHERE THE BREEDERS
Buy with confidence
Sell with confidence

70 REGISTERED BROWN SWISS

9 CHOICE BULLS — Sons of these great cows: Zazu J. B., Eliza Baron, Butternut Sweetness, and sired by such bulls as Lee's Hill Domino, The Laird of Lee's Hill, Royal's Meridian, J. B. Imperial, L. H. Royal Frojoy, and Betty May's Colonel.

61 TOP FEMALES — Cows with great records including Honor Roll production, and show type. Many bred and open heifers. Calves from fresh cows will be selling — male or female. The large offering will give everyone the opportunity to buy in all price ranges.

THE WAUKESHA SPRING SALE

FRIDAY, MARCH 31, 1950, AT THE WAUKESHA SALE PAVILION

Write AT ONCE for catalog
NORMAN E. MAGNUSSEN Brown Swiss Sales Service LAKE MILLS, WIS.

38th Waukesha Guernsey Breeders' Sale

WEDNESDAY, APRIL 5, 1950 12:30 Noon at WAUKESHA, WIS.

60 HEAD REGISTERED GUERNSEYS—4 BULLS of SERVICEABLE AGE

A Son of Meadow Lodge King's Superior and Justa Bebe Val
M—10282 F—452 Sr. 4 305-2x
M—17075 F—713 5 yr. 365C—3x

A Son of Pine Manor Career and O-Kay Levity Oline
M—21003 F—531 Jr. 2 365—905

A Son of St. James Champion Bruce and Wey Acres Levity Angela
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A Son of Green Meads King Dean and Meadowmere Narcissus
M—12294 F—562 365 days
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25 fresh and springing young cows, 25 bred heifers, 6 open heifers

Practically all of the females have been officially calfhood vaccinated.
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BROWN SWISS DISPERSAL MON., APR. 3, 1950

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Mr. and Mrs. Delbert Hitchcock & Sons, owners of fifty (50) head of Super Swiss, T. B. and Bang's tested and Calfhood vaccinated.

Selling Roelie's Ann, 127597, 4 yrs. 8 mos. 2X 365 days, 19151 mk., [illegible] fat. National Champion 4 yr. old cow on 2X, her two daughters and maternal sister, all bred to Colonel Harry J. B.

Selling Gloria of Longlake, 146436, 3 yrs. 3 mos. 2X 14953 mk. 664 fat. National Champion in 3 yr. old cow on 2X, due at sale time to Colonel Harry J. B. Also selling at this time is a full sister to Gloria.

18 cows with R.O.P. records from 453-588 herd average over 500 lbs. fat. 17 cows bred to Colonel Harry J. B. 8 will freshen before sale. 6 beautiful Colonel Harry daughters from 6 to 13 mos.

This herd has championship production, plenty of size, a world of quality, and the best in blood lines.

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Just $1 may save this calf

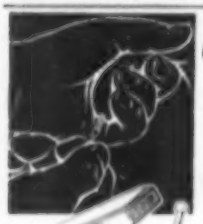
This calf has white scours. Unless its owner acts fast, it'll probably die. Or if it does live it'll probably be stunted for life.

There's a wonderful treatment. It's SKP, a Dr. Hess product. SKP is saving hundreds of calves.

White scours is a swift disease — it takes the sap out of a calf in no time. Keep SKP on hand. Treatment for one calf is only $1. Is a good heifer calf worth $1? Get SKP from a Dr. Hess dealer—or write Dr. Hess & Clark, Inc., Ashland, Ohio.

SKP

a Dr. Hess product for calf scours



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demands, above all else, that the SHAPE of the duct be held in exact, normal position during healing. No device does this like scientifically-shaped, ivory-like BAG BALM Dilators. Smooth, flexible, sterilized and packed in medicated ointment. Will not dissolve, come apart or snag tissues. Cannot absorb pus infection. 25 in medicated BAG BALM. At all farm-supply stores.

DAIRY ASSOCIATION CO., INC.
Lyndonville , Vermont

Bag Balm TEAT DILATORS

UDDER INJURIES TREATED QUICKLY

With TAMM Udder Support

Use Tamm waterproof udder support on cows with udder injuries—pour warm solution of epsom salts, boric acid or penicillin inside. Replenish with more heated solution often. This keeps the temperature up and heals torn or punctured udder or teat very quickly. Tamm udder support is fully adjustable and easily removed for milking. Three sizes: for cows under 1100 lbs., small; for cows 1100 to 1600 lbs., medium; and for cows over 1600 lbs. get the large size. Order direct if your dealer can't supply you. $15.00 PREPAID.

Dealers Write for Prices

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PREVENT LOSSES FROM POWER FAILURE with a low-cost Onan Standby Electric Plant. Equipped with line transfer control it starts automatically when power fails, stops when power is restored. Many models for standby or regular use. 350 to 35,000 watts.

Model JCK 18 2000 Watts, A.C.

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Roll or unroll barb wire, check row or smooth wire—at speeds up to 20 m.p.h. Quickly bolted to any row type tractor. Double acting clutch keeps wire tight. Only one reel required. Fully guaranteed. Write For Free Folder

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Collects Damages for Bang's

In July of 1946 a North Dakota tenant and his wife entered into a written farm lease with a landlord for the farming of certain lands in Grand Forks County, North Dakota. Among other things, the lease provided that the tenant and landlord were to furnish 10 head of cattle each, and that this herd of 20 head would become joint property of the two and they would share equally in the increase and produce from the herd.

The tenant brought his 10 head of milk cows, which had been inspected and found free of brucellosis infection by the blood agglutination test. Before the landlord delivered his 10 head, the tenant questioned him about testing his cattle and was informed that they came from a tested herd. These cattle were delivered to the tenant in October 1946. In November of that year one of the cows presented by the landlord gave birth to a calf which was sickly and died two weeks later.

The previous caretaker of the landlord's cattle discovered in the winter of 1946-47 that some of his cows were sick and gave premature birth to their calves. He then sent for a veterinarian and the herd was tested in April of 1947. It was found that several of the cows were infected with brucellosis and, consequently, quarantined.

The previous caretaker, knowing that the landlord had taken cattle from his herd and delivered them to his other tenant, took the veterinarian over to the tenant's farm and that herd was tested. At that time, May 29, 1947, it was found that one cow was infected and that there were four suspects. The infected cow was sold but it developed later the disease finally spread into the rest of the herd and, as a result, in the fall of 1948 the whole herd was sold for slaughter.

The tenant sued for damages against the landlord and testimony developed that the cattle of the landlord had not been tested for a period of two years. Furthermore, one of his tenants had notified the landlord that one of his cows had aborted about a year or so earlier but the landlord did nothing about it.

After four days of trial the jury returned a verdict in favor of the plaintiff (tenant) for the amount of $2,500, which was all that was asked. This was for loss of milk, abortions, and the difference in value of the animals and salvage.

The jury was composed of eight men, all farmers, and four women.—T. O. BRANDENBURG.

"Fair" Bulls

Since the establishment of type classification by the Holstein-Friesian Association in 1929, a total of 62 bulls have been classified "Fair." Of these 62 bulls, only 28 had any classified progeny.

A study of the progeny of 28 "Fair" sires revealed they had a total of 166 classified progeny, or seven daughters per sire. Results of these 166 classifications were, as follows: nine Very Good, 47 Good Plus, 65 Good, 43 Fair, two Poor. The average of the progeny of this group of "Fair" sires was 77.3.

Injury of the teat or udder is the starting point of most cases of bovine mastitis.

Deficiencies of iron and copper, resulting in anemia, are common in pigs raised without access to soil.

MINRALTONE HELPS BUILD CHAMPIONS

Sir Standard Bill, shown above, is herd sire for the 100 head of Registered Jerseys at Senn's Dairy, Newberry, S. C. The entire herd is MinRaltone-fed.

Noted Senn's Dairy Herd Protected Against HIDDEN HUNGER*

W. E. Senn, owner of Senn's Dairy, grows his own grain — except for concentrates. He does his own milling and mixing on the farm — and he premixes MinRaltone, as well as allowing his prize Jersey herd free access to it. Mr. Senn has this to say about MinRaltone, "*We've been feeding MinRaltone for about a year and a half. It's been a worthwhile investment for us because it insures that our stock won't lack essential minerals needed for health, production and reproduction.*"

Now is the time to help safeguard *your* profits and the health and continued productivity of your stock. Follow the lead of successful dairymen — feed MinRaltone to your herd. MinRaltone protects against Hidden Hunger* because it contains 11 essential minerals with Vitamin D. Write for free MinRaltone feeding booklet and complete details.

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*HIDDEN HUNGER — Lack of essential mineral elements needed by livestock for sturdy health, rapid growth, peak production and reproduction.

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Fertilizer—Lime—Seed Distributor
3 to 14 ft.
Free Booklet $66.00 up

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ARE YOU MOVING?

Be sure to notify us three weeks ahead of time. Then you won't miss any issues. Give both your old and new addresses. — Hoard's Dairyman.

Veterinary Column

DR. J. W. BAILEY

Sterility of the Bull

Every once in a while we hear complaints that a herd sire is sterile and unable to "settle" cows that are bred to him. Sometimes the bull seems in the best of health and goes through the service act in perfectly normal fashion. However, some animals may act sluggish and show no interest whatever in cows that are brought to them. Again, sires may mount the females but be unable to complete the actual breeding act.

Cause

Plain overuse is the most common cause of sterility in bulls. Diseases like Bang's and trichomoniasis can also cause such trouble. A sire may be overfed and develop such a middle that he becomes sluggish and physically unable to breed a cow. Occasionally, sterility may be due to a lack of vitamin C or A. Other causes are starvation, lack of exercise, injuries, untrimmed feet, stabling in dark quarters, sickness, transportation, old age, or a change of climate.

Diagnosis

Diagnosis may be partly made by an examination of the breeding records. However, this will not furnish definite proof, since the cows may be at fault instead of the bull. It sometimes happens that a change in bulls puts a prompt end to breeding troubles. Such an occurrence puts the finger of suspicion on the first bull used, of course.

The very actions and physical appearance of a bull may be all that are needed to convict him of sterility. However, microscopic examination of the semen is probably more valuable than anything else when it comes to passing judgment on a suspected bull. Since this is a job requiring special training, it cannot be satisfactorily handled by all owners. Contrary to popular belief, movement of spermatozoa is no indication that semen is of good quality. When laboratory facilities are available, a blood analysis may be made to determine a possible deficiency of vitamin A or C.

Treatment

A bull should be retired from service for several months as soon as he is definitely proven sterile. Depending on the actual cause, additional treatment may also be given. Feet may be trimmed, exercise enforced, rations and quarters changed, or hormone preparations used. Vitamin C may be supplied through feeding chlorobutanol or injections of ascorbic acid, and vitamin A may be fed. Turning out to grass in the spring of the year sometimes affects a cure after everything else has failed. Miracles must not be expected from any treatment, for it often happens that nothing will help a sterile bull to become fertile again.

Prevention

Prevention is pretty much a matter of properly using and caring for the bull. He should be kept separate from the cows and service limited to one leap at the time of breeding. A bull running with the herd may expend enough energy on one cow to breed a dozen. When use is evenly distributed throughout the year, a mature bull will probably be able to take care of about 40 cows annually. Under no conditions should a bull under a year old be used for service. Between one and two years, a sire may be used on 10 females. The next year he may service 20 cows and 30 as a three-year-old. Such figures are based on single services per cow and distribution of breeding throughout the year. Other preventive measures are concerned with good feeding and management practices relative to the various causes listed earlier.

SWOLLEN AND CAKED UDDERS

It's getting so practically every cow or heifer that I have freshen gets such an awfully swollen and caked udder before ever dropping their calves. They swell and cake, also fever clear up into the navel and way up behind. Act like they're in misery, especially walking. Is this a matter of improper feeding before freshening or not? If so, which ration do I use to help out the situation? What do you think of milking them out a week or two before freshening? Any information on this subject will certainly be appreciated, as I have really been having a time with most of them.

Athens, O. L. E. D.

As long as you have good cows you will probably have trouble with badly swollen and caked udders before calving. It is natural for these better animals to "bag up" in such a fashion and there isn't too much to be done about it.

Feeding a bulky, laxative ration with plenty of bran and molasses for a couple of weeks before calving will probably help a little. So will giving the animals plenty of exercise, though they should be exercised alone to prevent possible damage to those precious udders by other cows. Recent experiments indicate that milking for a week or ten days before freshening is valueless as a means of preventing this trouble. If started as much as three weeks before freshening, we suspect that the practice might be of some help in preventing udder congestion.

PIGS HAVE ERYSIPELAS

My pigs have erysipelas. It is the kind that they are at a standstill; that is, they don't lose or gain. They are a good size now.

If I keep my sows will the spring litters also get erysipelas or do you advise buying other sows?

Bernard, Iowa J. E. G.

If you keep the sows it is likely that your spring pigs will also have erysipelas, though probably not until a couple of weeks after they have been weaned. This is because the sows generally give off antibodies in their milk that protect the pigs as long as they get it. Some of the sows are very likely to remain as "carrier" animals and so will act as a reservoir of infection. However, the grounds of your premises are also probably loaded with the germs to infect new arrivals. Thus if you sold all the sows, the germs would probably still be on your place.

Consequently, we think you should keep your own sows if they are not visibly sick. If they are standing still like the pigs, you'll probably do well to get rid of them, since they will be poor bets to give you good litters at farrowing time.

"The best treatment for mastitis* I've ever used!"

says
E. J. Lubeck
of
Milton Junction,
Wisc.

"I keep it right in the barn . . ."

". . . where I can get it quickly . . ."

". . . and use it to treat mastitis in a few seconds"

"We spent a lot of money trying to keep mastitis out of our herd of 27 Holsteins. We tried most of the mastitis treatments and nothing seemed to work.

"Then I read about Squibb's Penicillin Ointment. I went to my druggist, bought my first tube and used it. *I have not been without it since.*

"This Penicillin Ointment is the best treatment I've ever used. It has given us remarkable results and saved us real money. Now we expect to continue getting full production of milk and cream from clean, healthy cows.

"We especially like the shape and style of the tube. It is fine. Cows do not seem to object and the thin taper makes it mighty easy to insert in the quarter. The ointment comes out easily, too, so it only takes a few seconds to treat a quarter.

"Whenever there is the least sign of mastitis in our herd, we treat the cow then and there, as we keep Penicillin tubes in the barn all the time."

• • •

It's a good idea to do what Mr. Lubeck does: keep some Squibb Instant-use Penicillin *on hand* right in the barn, and treat mastitis early—as soon as it shows up.

Why not get a dozen tubes the next time you're in your drug store? They have it or can get it for you.

For accurate diagnosis of mastitis, consult your veterinarian.

For SCOURS in calves and other young animals—PENOVOXIL CAPSULES. A specially prepared, exclusive Squibb formula—only product of its kind on market. Effective—easy to use—no drenches—no injections. If your druggist isn't supplied, write to E. R. Squibb & Sons, Veterinary and Animal Feeding Products Division, Dept. HD3A, 745 Fifth Avenue, New York. Literature on Penovoxil Capsules, Penicillin Ointment, and other Squibb specialties, available on request. Just drop us a postcard for yours.

*Due to *Streptococcus agalactiae*, the cause of the largest percentage of all mastitis cases.

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